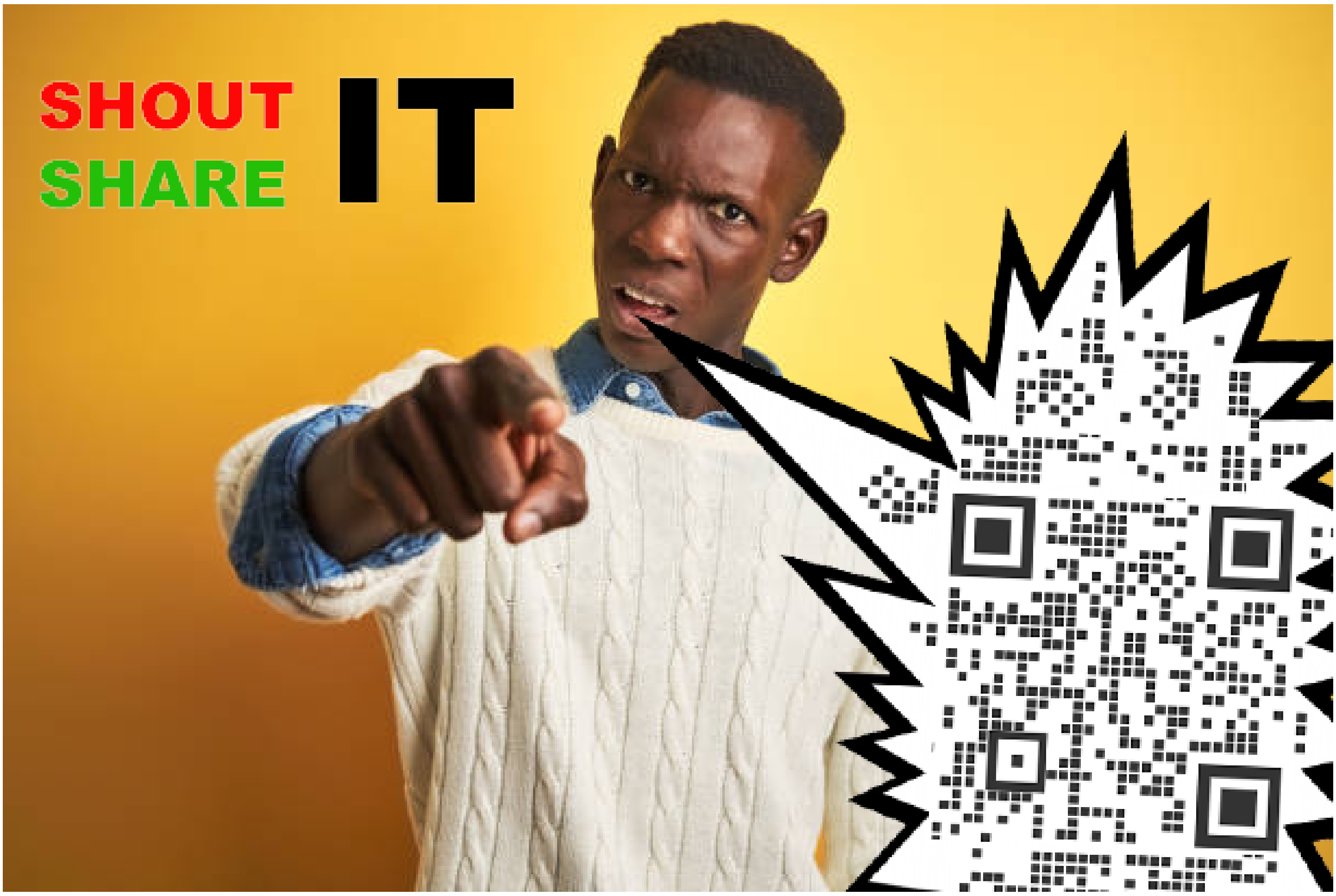
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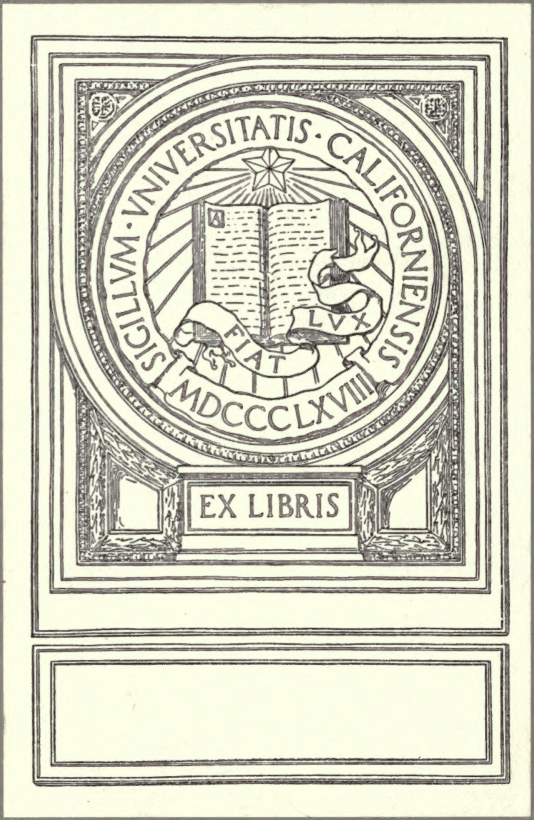
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TRANSACTIONS OF THE
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VOLUME 20, PAGES 1-131 MAY, 1915

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BY

GEORGE DAHL, PH.D.
Assistant Professor of Old Testament Literature,
School of Religion, Yale University

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SOME OF THE ABBREVIATIONS USED.

Baed. (4):	Baedeker, *Palestine and Syria*, 4th edit. 1906.
C.I.S.:	*Corpus Inscriptionum Semiticarum.*
C.O.T.:	E. Schrader, *The Cuneiform Inscriptions and the Old Testament*, trans. O. C. Whitehouse, 1885.
Guér., *Sam.:*	H. V. Guérin, *Description de la Palestine*, II Samarie, 1874-5.
K.H.A.T.:	*Kurzer Hand-Commentar zum Alten Testament* (ed. Marti).
O.S.:	*Onomastica Sacra*, ed. Lagarde; 2nd ed. 1887.
P.E.F.Q.:	Palestine Exploration Fund, *Quarterly Statements.*
R.:	Rawlinson, *The Cuneiform Inscriptions of Western Asia*, I—V (1861-84), IV$^{(2)}$ (1891).
S.B.O.T.:	*Sacred Books of the Old Testament* (ed. P. Haupt).
S.W.P.:	*Survey of Western Palestine.* Palestine Exploration Fund.
Tab. Peut.:	*Tabula Peutingeriana* (ed. E. Desjardins, 1869-74).

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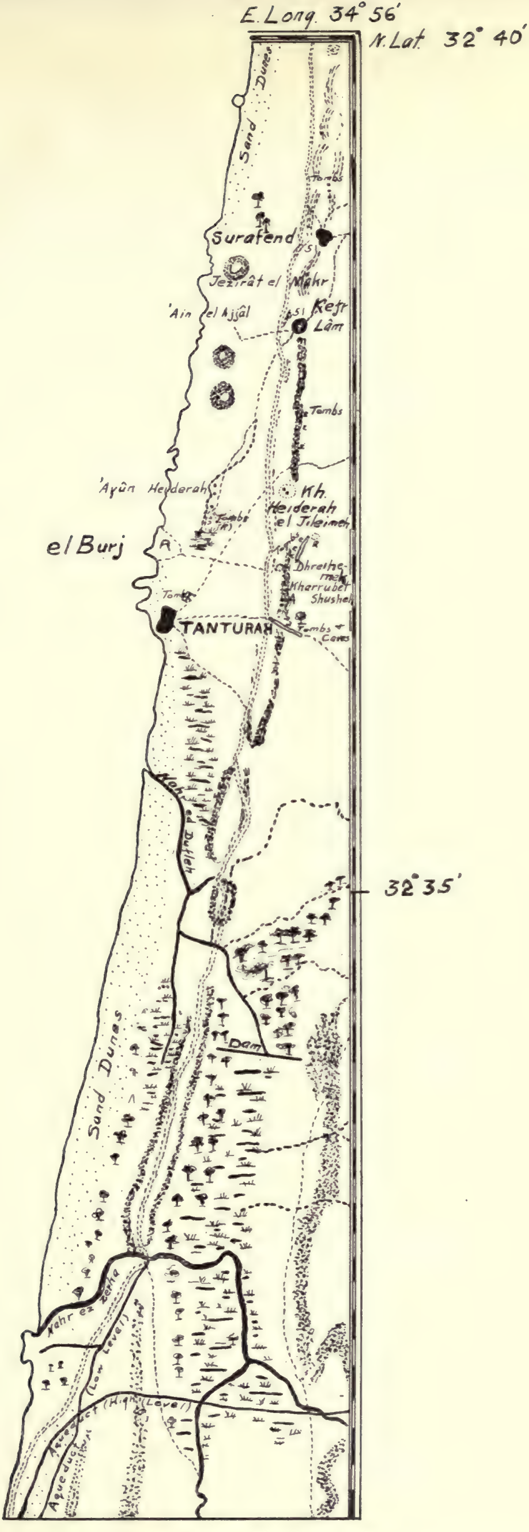
E. Long. 34° 56′
N. Lat. 32° 40′
Sand Dunes
Tombs
Surafend
Jezirât el Mahr
'Ain el Ajjâl
Kefr Lâm
Tombs
'Ayûn Heiderah
Kh. Heiderah el Jileimeh
Tombs (R)
el Burj
Dhreitheh
Kharrubet Shusheh
Tomb
TANTURAH
Tombs + Caves
Nahr ed Dufleh
32° 35′
Dam
Sand Dunes
Nahr ez Zerka
Aqueduct (Low Level)
Aqueduct (High Level)
Aqueduct

DOR AND ITS ENVIRONS.

FOREWORD.

There seems to be room for a careful and critical examination of the sources for the history of the little-known city of Dor. This work presents the results of an investigation which has aimed to take into account all the extant literature bearing on the subject. So far as possible the testimony of sources has been carefully sifted and weighed. It is to be hoped that the evidence of excavations on the site of the city may sometime be available to increase our knowledge gained from the literary remains.

To Professor C. C. Torrey of Yale University, my sincerest appreciation and most grateful thanks are due for many helpful suggestions and for inspiration gained through conference with him. I wish also to extend my thanks to Professor W. Max Müller of the University of Pennsylvania for information regarding the Egyptian form, D-ïra. To Professor A. T. Clay of Yale University I wish to acknowledge my indebtedness for assistance in the preparation of the chapter on "Dor in Assyrian Literature."

TOPOGRAPHY OF DOR.

Beginning at the headland of Mount Carmel, the great Maritime Plain of Palestine extends southwards for a distance of about one hundred miles. This plain naturally divides into three portions[1]. The north corner, lying between Mount Carmel and the Mediterranean, begins as a narrow pass some two hundred yards wide between the Carmel headland and the sea, gradually broadening until at its southern extremity, the Crocodile River (mod. Nahr el-Zerḳā), it is eight miles wide. Its length from Carmel to the Zerḳā is nearly twenty miles. From the Crocodile River the second portion of the Maritime Plain, the Plain of Sharon, widening from eight miles to twelve, rolls southward some forty-four miles to the Nahr Rūbīn and a line of low hills to the south of Ramleh. To the south of the Plain of Sharon, the last division, the Plain of Philistia, extends a distance of forty miles to the River of Egypt (the Wady el-ʻArīsh).

In the southern part of the first of these divisions lies the village Ṭanṭūra, successor to the ancient city of Dor[2]. Ṭanṭūra lies in northern latitude[3] 32° 36′ 35″, in eastern longitude from Greenwich 34° 54′ 40″. The ruins of Dor, known as el-Burj or Khŭrbet Ṭanṭūra[4], are located about one-half mile directly north of the modern town. Dor proper lies therefore in latitude 32° 36′ 50″, longitude 34° 54′ 40″. Its distance from the headland of Carmel and from Ḥaifa is about fourteen and one-half miles south. It is about six and one-half miles south of ʻAthlīt, which was the chief city of the district during the Crusades[5]. Caesarea[6], built by

---

[1] G.A.S., *Hist. Geog.*, pp. 147 f.

[2] C. R. Conder, in Hast. *D.B.* s. v. Dor, seems now inclined to reject his earlier identification of Ṭanṭūra with Dor (*P.E.F.Q.*, 1874, p. 12; *S.W.P. Mem.* II, p. 3). The location of the town, however, agrees so well with the data at hand that nearly all writers accept the identification as practically certain.

[3] P.E.F., *Map of Palestine*, Sheet 7, I j; Ptolemy (*Nat. Hist.* V, 15, 5) locates Dor in 66° 30′, 32° 40′.

[4] *S.W.P. Mem.*, II, p. 7.

[5] Then called Castellum Peregrinorum (Buhl, *Geog.*, p. 211); *P.E.F.Q.* 1874, p. 12.

[6] Anciently Στράτωνος Πύργος (G.A.S., *Hist. Geog.*, pp. 138 ff.).

Herod the Great in time to become the capital of the Roman province of Judea, lies eight miles south of Dor[1].

Ṭanṭūra, the modern town, an unimportant village of a few hundred Moslem inhabitants[2], lies along the coast. South of the village stretches a fine open sandy beach; northwards the shore is rocky as far as the Jezīret el-Mŭkr[3]. To the east and southeast lies a swamp[4]. A short distance to the south of the town is the Nahr el-Dufleh[5], a stream some five to ten yards across and apparently perennial; still farther south, on the way to Caesarea, one crosses the Nahr el-Zerḳā, the Crocodile River of the ancients. In the sea, opposite the town, are several small islands; these combine with a slight curve in the beach to form a sort of harbor for the small coasting craft. On the north this little bay is protected by a rocky point that juts out into the sea in the form of a promontory[6]. North of this promontory is another ancient port; evidently there was here a double harbor[7]. The buildings of the town itself are for the most part mud cabins one story high, lying along the beach[8]; stones taken from the ruins to the north have been used in building the better houses[9]. To the east is a square stone building[10] used as a *meḍāfeh*, or "guest house," for passing travelers.

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[1] According to the Tab. Peut. the distance from Cesaria to Thora (sic) is VIII (Roman miles); Eus. and Jerome (*O.S.* 283:3; 142:13-15) make it nine Roman miles.

[2] Baed. (4) (1906) p. 231; *Enc. Bib.* s. v.; *S.W.P.*, *Mem.* II, p. 3; Buckingham (*Trav. in Pal.*, p. 123; so von Raumer, *Palästina* (3), p. 154, in 1850) in 1823, estimated the population at 500 souls, with 40 or 50 dwellings; Guérin (*Sam.* 2, 305 f.) in 1874 says 1200 inhabitants (but Guérin seems to overestimate the population of several towns in this district). According to the Population List of the Liva of 'Akka (reported by G. Schumacher, *P.E.F.Q.*, 1887, p. 181, no. 38) there were in 1887, 154 Moslem men between 16 and 60 years of age; this would give an estimated total of about 770 souls; the town at that time was growing (*Ibid.* p. 84).

[3] *S.W.P. Mem.* II, p. 1; Buhl, *Geog.*, p. 32; see map.

[4] Baed. (4), pp. 231 f; *Pal. Expl. Map*, Sheet 7; Buhl, *Geog.*, p. 211.

[5] G.A.S., *Hist. Geog.*, Map VI, opp. p. 379, errs in making Wady el-Dufleh tributary to the Nahr el-Zerḳā. The Nahr el-Dufleh is also called Nahr el-Ḳarājeh (*S.W.P.*, *Name Lists*, p. 140).

[6] Guér., *Sam.* 2:305 f; *P.E.F.Q.*, (1887), p. 84; Ibid. (1873), p. 100.

[7] G.A.S., *Hist. Geog.* p. 130; see page 11 below.

[8] Buhl, *Geog.*, p. 211; *S W.P. Mem.* II, p. 3.

[9] *P.E.F.Q.*, 1887, p. 84; Guér., *Sam.* 2:305.

[10] *S.W.P. Mem.* II, p. 3.

Guérin[1] mentions two mosques, both partly in ruins in his time, one of which contained several ancient granite columns. With the increasing prosperity of the town, a number of good-looking granaries have risen near the seashore[2]. There is a well northeast of the village[3]. Many of the inhabitants are sailors and fishermen; for the rest, the industries of the town are mainly agricultural and pastoral. In the fields to the east and the south grain is raised, part of which is exported in small coastwise sailing vessels[4]. As is usually the case in Palestine, the property of the natives of Ṭanṭūra consists chiefly in herds of cattle and goats[5]. The inhabitants share the greedy avarice and the thieving propensities so universal in that land[6]. On the whole, Ṭanṭūra is a typical Palestinian coast town.

A few minutes to the north of the modern village lie scattered about the ruins of ancient Dor. These ruins[7] consist of a mound covered with debris, with a fallen tower to the south; the remains of a double harbor and of a colonnaded building adjacent to the more northerly port; a large cistern now called El-Ḥannāneh; and an ancient causeway leading north and south to the east of the town. Rock-cut tombs are also to be found in the neighborhood.

The most conspicuous object to former travellers was the ruined tower, visible at every point from Carmel to Caesarea, perhaps dating from the period of the Crusades[8], which stood on a low rocky promontory to the south of the mound. South of this promontory, in the direction of the modern town, is a sandy beach and bay. On the north the chief ruins of ancient Dor line the shore. A deep moat separated the tower from the town. The height of the tower was about 40 feet; its top was 58.8 feet above the sea-level. The tower formed the northeast corner of a square fortress; the foundations of another corner tower can be seen near by. The whole was built of rubble and small stones, faced with well-cut stones about two feet six inches long and two feet high. The mortar was very thickly laid around the stones, and contained pieces of red pottery. The style and material of construction and a pointed arch in the east wall would seem to indicate that the tower was Crusading work. The foundations, however, are evidently much older[1]. On the 15th of January, 1895, the tower collapsed, leaving nothing of this important landmark but a heap of debris and the foundations[2]. It is safe to assume that the tower stones suitable for building purposes have long since been carried off to near-by Ṭanṭūra or to other towns along the coast[3].

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[1] *Sam.* 2:305 f. (1874-75); the Chevalier d'Arvieux, c. 1700 (in Labat, *Merkwürdige Nachrichten*, II. pp. 11-13), states that the inhabitants had no mosques; so Buckingham (*Trav. in Pal.*, p. 123) in 1821; writers after Guérin (e. g., *Pal. Ex. Fund. Mem.*, Baed., etc.) make no mention of a mosque.

[2] Schumacher in *P.E.F.Q.*, 1887, p. 84.

[3] *S.W.P. Mem.* II, p. 3.

[4] Sir C. Wilson, *Picturesque Palestine*, pp. 115 f.; *S.W.P. Mem.* II, pp. 3, 35; *P.E.F.Q.*, 1887, p. 84.

[5] Sir C. Wilson, *ibid.*

[6] Van de Velde, *Narrat.* I, 333; Buckingham, *Travels*, p. 123; the Chevalier d'Arvieux (in Labat, *Merkwürdige Nachrichten*, III, pp. 74-82).

[7] *S.W.P. Mem.* II, p. 7; Guér., *Sam.* 2:306 ff.

[8] Murray, *Handbook* (1875), p. 358; *Enc. Bib.* s. v. Dor; *S.W.P. Mem.* II, p. 8; *P.E.F.Q.*, 1873, pp. 99 f.—It is easily possible that most of these ruins are from a period later than that of the Crusades.

The mound, covering the site of the city itself, is about two hundred yards long, and comprises an area of several acres adjacent to the sea[4]. Broken masonry and fragments of glass and pottery cover it. Of the larger stones only a few pillar shafts remain, the greater part of the fallen blocks having been dug up and removed. The mound extends as far as the promontory on which the tower stands. Its flat top is about twenty to thirty feet above the level of the shore. On the edge of the mound near the sea, east of the debris of the tower, the mutilated remains of a colonnade may be seen. The bases and capitals are of a rude Byzantine character, resembling those found east of the Jordan and elsewhere, which are dated as of the fifth century[5]. The shafts are three feet in diameter. East of this colonnade is the moat mentioned above near which a number of drums of columns lie scattered about on the ground[6]. The city walls can no longer be clearly traced.

---

[1] Guér., *Sam.* 2:306.

[2] Dr. G. Schumacher in *P.E.F.Q.*, 1895, p. 113.

[3] *P.E.F.Q.*, 1883, p. 99; *ibid.*, 1887, p. 84.

[4] *P.E.F.Q.*, 1873, pp. 99f; *S.W.P. Mem.* II, p. 8; Guérin (*Sam.* 2:308) gives the dimensions of ancient Dor as 1200 meters long and about 670 meters wide; this evidently includes the various ruins, graves, etc., outside the city proper.

[5] *S.W.P. Mem.* II, p. 8.

[6] *Ibid.*; Guér., *Sam.* 2:307.

Like nearly all of the Syrian ports, Dor seems to have had a double harbor, facing north and south, whose two basins insured protection against winds from all directions[1]. This is the only kind of port practicable along the almost harborless coast. Both Sidon and Tyre had double ports[2]. Here at Ṭanṭūra the tower promontory separated the two harbors. The harbor south of the promontory contains the ruins of artificial moles in the sea[3], built to increase the size and security of the harbor. North of the promontory are the remains of a more considerable port. In the sea here is a peculiar scarped reef, through which a narrow passage has been cut to form an entrance to the harbor. Apparently this passage was curved, about fifty yards long with sides from eight to ten feet high. As at Tyre, the entrance to this passage was probably closed at one time by a chain or boom[4]. For the small boats of ancient times this double harbor, protected as it was by the promontory and by moles, offered fairly safe shelter.

Near the shore of the northern harbor a number of columns lie on the ground, each about one foot six inches in diameter, with simple square base[5]. The material of which these columns are made is the same coarse limestone as that of which the tower was built and is evidently taken from the quarries in the neighborhood. They seem to be the remains of a building close to the water, perhaps the temple of some maritime deity[6]. Just north of these columns there are four rock-cut tombs in the cliff[7]. One of these tombs has two loculi, the second a square chamber, and the third and fourth have three loculi each.

On the north harbor shore itself are three retaining walls, the remains of a maritime building. The southern wall is built against the north face[8] of the promontory on which the tower formerly stood. The work seems to be Roman[1]. The walls are built of perfectly-shaped blocks of coarse limestone, the stones measuring five feet six inches in length, two feet six inches in breadth, and two feet two inches in height. The total height of the walls is about fifteen feet, the thickness six feet. The masonry is laid, like brickwork, in alternate courses of headers and stretchers; an excellent cement is used. North and south the original building measured thirty paces; the side-walls are about eleven paces in length, the northern projecting nearly to the water. In front of this building there are a number of large flat slabs of the same size as the stones in the walls. These formed the pavement of what was apparently a wharf[2]. In the water a small jetty is visible. This large building was probably for the accommodation of sailors and traders, used doubtless as a storehouse and a market[3].

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[1] G.A.S., *Hist. Geog.*, p. 130.

[2] F. C. Eiselen, *Sidon*, p. 4; Hast., *D.B.* s.v. Zidon and Tyre.

[3] Guér., *Sam.* 2:306; Murray, *Handbook* (1875) p. 358.

[4] *S.W.P. Mem.* II, pp. 8, 9; Baed. (4) pp. 231 ff.

[5] *P.E.F.Q.*, 1874, p. 12; *S.W.P. Mem.* II, p. 8; Guér., *Sam.* 2:307. These columns were ten in number as reported by P. E. F. Survey and Guérin; doubtless some have been taken away since then.

[6] *P.E.F.Q.*, 1874, p. 12.

[7] *S.W.P. Mem.* II, p. 8.

[8] *P.E.F.Q.*, 1873, pp. 99 f.; *ibid.*, 1874, p. 12; *S.W.P. Mem.* II, p. 8; Guérin (*Sam.* 2:307) describes these as the remains of two adjoining buildings.

Continuing north from this building one finds on the shore the debris of several buildings. There are also a couple of small bays protected from the west winds by small islands. In one of these bays a long wall juts out into the water, evidently a pier of some sort; on the shore is a wharf paved with large stones. These ruins extend beyond the limits of the mound itself, making a total shore line of some 1200 meters in length[4].

The ruins of El-Ḥannāneh[5], an ancient cistern just east of the causeway, are connected with the town by the remains of a road. The cistern is built of stones measuring from two feet to three feet six inches in length, and is about ten paces square. The interior is lined with rubble coated with a hard white cement. The mortar behind this cement is thickly bedded and contains large pieces of pottery. There is a shallow round well of ashlar close to the north wall of the cistern. The work, resembling as it does that of the walls of Caesarea, probably belongs to the twelfth or thirteenth century.

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[1] *P.E.F.Q.*, 1873, pp. 99f.

[2] At the present time, however, the level of the water is by no means high enough to reach this wharf. (Ritter, *Die Erdkunde*, XVI, *West. Asien*, p. 608). Guthe (*Palästina*, p. 27) shows that even within historical times a change in the relative level of the Palestinian coast and the Mediterranean has taken place. He maintains that the land has gradually risen, while the level of the water has at the same time been sinking.

[3] Guér., *Sam.* 2:307; *P.E.F.Q.*, 1874, p. 12.

[4] Guér., *Sam.* 2:307 f.; Murray (*Handbook*, 1875, p. 358) says one-half mile.

[5] Baed. (4), pp. 231 ff.; *S.W.P. Mem.* II, p. 9; *P.E.F.Q.*, 1873, pp. 99 f.; written الحنّانة "hydraulic machine," or "waterwheel."

The causeway[1], lying east of the town and running north and south, is traceable here for about a quarter of a mile. This was the great coast highroad to Egypt; here and there, as for example at 'Ayūn Ḥeiderah, the ruts of the light chariot wheels are still visible on the rock. At the time when this road was in general use this region was doubtless covered with villages and as prosperous as any other part of Palestine. On one side of the causeway, just south of El-Ḥannāneh, there were nine[2] granite columns; three were planted perpendicularly touching one another; south of these were three more, also touching; the remaining three were fallen and scattered about. Their diameter was one foot six inches; they were without base or capital, having only a simple fillet at the upper end of the shaft; they were partly sunk in rubbish. Inasmuch as the arrangement of these shafts is similar to that of some of the milestones on Roman roads, it is quite likely that they had been taken from an older building and used to mark the ninth Roman mile from Caesarea[3].

East of this coast road and parallel to the sea stretches a rocky ridge, forty to fifty feet high and some three hundred yards broad[4]. This ridge, commencing in sand dunes about three miles southwest of Mt. Carmel, gradually increases in regularity and hardness of rock, until, between 'Athlīt and Ṭanṭūra, it is about fifty feet high. Its southern limit is a few miles south of Caesarea. It serves to separate the narrow coast plain, about a mile wide, in which Dor is situated, from the inland plain to the east. The ridge seems to have formed a protection against hostile incursions, for the stone has been quarried in such manner as to leave a narrow crest on the summit, which makes a protecting wall of living stone. In at least four places passages have been cut through the ridge, and show traces of having been closed by gates. Numerous tombs, dating probably from the early Christian centuries, have been cut in the ridge.

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[1] *S.W.P. Mem.* II, p. 9; *P.E.F.Q.*, 1874, p. 12.

[2] Whether all these columns are still in place is questionable. Probably part or all have been carried away.

[3] *O.S.*, 142:13-15; 283:3.

[4] *S.W.P. Mem.* II, p. 1; *P.E.F.Q.*, 1873, p. 99; Guér., *Sam.* 2:308; van de Velde, *Narrat.* 1:333; Buhl, *Geog. des alt. Pal.*, p. 32.

Almost directly east of ancient Dor, near the ruins called Dreihemeh[1], is one of the rock-cut passages, leading to the plain to the east[2]. This is the most southern of the passages cut through the ridge. It is apparently of considerable antiquity, with rock-cut tombs and guard houses in the sides. The average breadth of the passage is fifteen feet, its height ten feet and its length about two hundred feet in all. Near the entrance to this cutting is a semi-circular apse cut into the rock[3]. The radius of this apse is thirteen feet five inches; two steps lead up from the present floor to the surface of the rock. At each end and in the middle of the semicircle are square holes, evidently intended for pillars. The presence of a quarry to the west containing stones not quite broken out of the rock lends weight to the suggestion that the work is an unfinished basilica.

The whole ridge near Dor seems to have been extensively used as a quarry for the ancient town. In some places considerable quantities of stone have been removed. Here, too, was the principal necropolis of the city[4]. A large number of the tombs are still preserved, though all have been plundered. Some of them are single, while others contain a number of "kokīm" or burial chambers. In many of the kokīm the stone has been left higher at one end, to form a sort of stone pillow.

Between the modern city and the ruins of ancient Dor there has been discovered a large and interesting tomb[5]. It is a chamber fourteen and one-half feet wide by nineteen and one-half feet long. There are on the left five kokīm, each measuring seven feet by three feet; at the back there are three, and at the right four. In the four corners of the chamber are four smaller chambers, apparently double kokīm, for receiving two bodies each. The entrance to the tomb is a long passage descending by steps to the door. The door is square, with an arch above it outside. On the left of the entering passage is another koka, also measuring seven by three feet. Bones and skulls were found in the tomb. In the double corner koka at the back on the left there is a niche eighteen inches high and nine inches across, probably intended for a lamp. This tomb is of the same general type as the others found in the neighborhood, and apparently dates from at least as early as the beginning of the Christian era.

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[1] Arab. دريهمة (diminutive form), meaning a small silver coin; Greek *δραχμή*.

[2] *S.W.P. Mem.* II, p. 11.

[3] Dr. G. Schumacher in *P.E.F.Q.*, 1889, p. 191; is this the "excavation resembling a small theater" mentioned by Murray (*Handbook*, 1875, p. 358)?

[4] Guér., *Sam.* 2:308.

[5] *S.W.P. Mem.* II, p. 10.

Among the more important ruins near Dor, Dreihemeh[1] deserves mention. It lies east of the mound, commanding the entrance to the rock-cut passage through the ridge[2]. There are here ruins of buildings, several columns and a number of tombs. Guérin speaks of an ancient well here, Bir Drimeh (بير دريمة), cut in the rock, square in shape, and with holes dug in its side to permit one to descend to the bottom[3]. North of Dreihemeh lie the ruins and tombs of Khŭrbet Ḥeiderah[4]. There is here a shaft ten feet deep and sixteen feet wide at the top, with a staircase and small recesses in its side. At the springs called ‘Ayūn Ḥeiderah[5] there are deep ruts in the stone three feet, three inches apart and about six inches wide each, made, probably, by the carts of the Crusaders. Here are also tombs cut in the rocky ridge. A foot-path crosses the coast plain diagonally from Ṭanṭūra to Kefr Lām[6], a small village of mud hovels crowded within the walls of an ancient Crusading fort; the distance is about two and one-half miles. Farther north the village of Ṣŭrafend[7], a small collection of mud cabins with ruins to the north, stands upon the ridge.

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[1] *S.W.P. Mem.* II, p. 11; Guér., *Sam.* 2:309.

[2] See p. 14.

[3] Guérin (*Sam.* 2:309) finds in the name Drimeh the Greek name *Δρυμός* of Strabo (*Geog.* XVI, 2:28) and Josephus (*B.J.I.*, 13:2; *Ant.* XIV. 13:3), described as being the region adjacent to Mt. Carmel. The Greek word signifies "oak-coppice." On the other hand, the form of the name as given by the P.E.F. (see note 1, p. 14) is Dreihemeh, apparently a diminutive form from the Greek *δραχμή* and denoting "a small silver coin." It is quite possible that the Greek *Δρυμός* has in popular use been changed to Dreihemeh as a form more easily understandable.

[4] *S.W.P. Mem.* II, p. 30; Guér., *Sam.* 2:308.

[5] *S.W.P. Mem.* II, p. 6, حيدرة = "declivity," "descent," or possibly "lion." (*S.W.P., Name Lists*, p. 140; Lane's *Arab. Dict.*)

[6] Wilson, *Pict. Pal.*, pp. 114 ff.; *S.W.P. Mem.* II, p. 3.

[7] *S.W.P. Mem.* II, p. 4; Ritter, *Die Erdkunde*, XVI, p. 113.

THE NAME DOR.

Dor appears in the Old Testament under the two forms: דּאר[1] and דּוֹר[2]. In the Eshmunazar[3] inscription דּאר is used. The Assyrian[4] inscriptions witness to the form Du-'-ru (or Du-'u-ru); the Egyptian Papyrus Golenischeff writes D-ï̥rḁ[5]. Among Greek writers Δῶρος and Δῶρα are the forms in which the name most frequently occurs; but Δωρά[6] and Δοῦρα[7] are also found. Pliny[8] uses Doron (or Dorum), and the Tabula Peutingeriana[9] gives the name as Thora. The form Δῶρος is found mainly in the earlier writers; Δῶρα later becomes universal. Nevertheless Stephan of Byzantium, writing as late as the fifth century A. D., prefers the older form Δῶρος. The following authors give the name of this town as Δῶρος: Scylax (c. 500 B. C.), Apollodorus (c. 140 B. C.), Alexander of Ephesus (c. 50 B.C.) and Charax (c. 150 A. D.)[10]. To this same category belongs Pliny's Doron or Dorum[11]. Δῶρα (variants Δωρά and Δώρα), the second and later of these two forms, appears in 1 Macc. 15:11, 13, 25; it is used by Artemidorus[12] (c. 100 B.C.), by Claudius Iolaus[13] (c. 50 A. D.), by Josephus, by Ptolemaus[14] (between 127 and 151 A. D.), in the Clementine Recognitiones[15] (prob. c. 225 A. D.), by Eusebius (*O. S.* $^{(2)}$ 250^{56}), Jerome (*ibid.* 115^{22}), Hierocles[16] (6th century ?), in the list of Bishops in Le Quien[17], by Geographus Ravennas[1], by Guido[2], by Georgius Cyprius (♯1000)[3] and on coins[4]. To this list must be added Polybius (V^{66}: *Δοῦρα*) and the Tabula Peutingeriana ("Thora")[5]. First Maccabees makes *Δωρά* an indeclinable noun; usually it is treated as a neuter plural[6]; occasionally it is regarded as a feminine singular[7].

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[1] Josh. 17:11 ; 1 Kings 4:11.

[2] Josh. 11:2 ; 12:23 ; Jdg. 1:27 ; 1 Chron. 7:29.

[3] Line 19 ; *C.I.S.*, I, 3 ; Lidzbarski, *Taf.* IV^{2}.

[4] II R. 53, no. 1, rev. line 40 ; *ibid.* no. 4, line 57.

[5] Müller, *Asien u. Eur.*, p. 388.

[6] 1 Macc. 15:11, 13, 25.

[7] Polybius, *Historiae*, V : 66.

[8] *Natural History*, 5:17.

[9] Ed. Desjardins, Segment IX.

[10] The three last named in *Steph. Byz.* s.v. Δῶρος.

[11] *Nat. Hist.* 5:17.

[12] *Steph. Byz.* s.v. Δῶρος.

[13] *Ibid.*; for the correct form of the name (i. e. Iolaus), see C. Müller, *Fragm. Hist. Graec.*, IV, 362-364.

[14] V, 15:5 = Ed. Didot, V, 14:3.

[15] *Clem. Recogn.*, IV: 1.

[16] *Synecdème*, ed. Parthy, p. 43.

[17] *Oriens Christianus* III, 574 ff.—of the 5th and early 6th centuries.

How are we to account for the variations in the Greek form of the name? To the Hebrew דאֹר (or דוֹר) early Greek writers would most naturally attach the masculine ending *-os*, partly influenced perhaps by the name of the Greek hero Doros[8]. Thus the earlier Greek form of the town's name arose. As the Aramaic language, however, began to supplant the Hebrew, the Aramaic determinative ending ָא[9] was added to the original name, giving the form דוֹרָא (or דאֹרָא). The translator of 1 Maccabees was well acquainted with the Aramaic language and therefore used *Δωρά* as an indeclinable noun. Most Greek writers, on the other hand, would represent this ending either as a feminine singular or a neuter plural form. There would naturally be no fixed rule for the accent of the Greek form of this Aramaic name; and, as a matter of fact, we find that in various writers and different manuscripts of the same writer, the accents vary widely. Stephan of Byzantium[10] prefers as the ethnic form of the name of this town, *Δωρίτης*. This form is derivable from either *Δῶρα* or *Δῶρος*, as he proves by analogies drawn from the ethnics of other towns. He mentions, however, the use by Pausanius of the ethnic Δωριεῖς, the plural of Δωριεύς, as though built on a form Δώριον. On coins of Dor[1] the forms ΔΩΡΙΤΩΝ and ΔΩΡΕΙΤΩΝ are found, corresponding to the forms Δωριτης and Δωρειτης. Thus we have witnesses for two forms of the ethnic, viz.: Δωρίτης (or Δωρείτης)[2] and Δωριεύς; of these the former is the better attested.

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[1] Edd. Pinder et Parthey, pp. 89, 357.

[2] *Geographica*, § 94.

[3] Ed. Gelzer, p. 51.

[4] G. F. Hill, *Coins of Phoen.*, pp. LXXV, 118.—Hecataeus (c. 500 B. C.) in *Steph. Byz.* s. v. *Δῶρος* reads: *μετὰ δὲ ἡ πάλαι Δῶρος, νῦν δὲ Δῶρα καλεῖται.* This statement in its present form can hardly be original with Hecataeus. For this change in the form of the name probably did not take place until several centuries after Hecataeus wrote. The interpolator states the fact as evident in his own time.

[5] Ed. Desjardins, Seg. IX.

[6] Josephus usually; Eusebius, *O.S.* $^{(2)}$ 280:40; 283:3; the list of bishops in Lequien.

[7] Jos., *Ant.* XIII, 7:2 in several MSS.; *Clem. Recog.* IV:1.

[8] See Claudius Iolaus in *Steph. Byz.* s.v. *Δῶρος*.

[9] Possibly to distinguish the proper name Dor, as "*the* walled city" (see p. 19) from other cities to which the term "dor" (= walled town) might be applied. There was besides in the later Aramaic a tendency to use the determinative ending freely.

[10] S.v. *Δῶρος*.

The variation in the middle consonant in the Hebrew name Dor finds its parallel in the case of En-dor. For in 1 Sam. 28:7 En-dor is written עֵין דּוֹר; but in Ps. 83:11 the form עֵין דֹּאר appears[3]. In the name of the town Hammath-dor of Josh. 21:32 we have the form דֹּאר. The transliteration of all these names in the Greek Old Testament throws no light upon the question as to what was originally the middle consonant[4]. Nor does the single occurrence of the name in Egyptian documents furnish any information in this regard[5]. But the use of the form דאר in the Eshmunazar inscription and of Du-'-ru (or Du-'u-ru) in the Assyrian inscriptions[6] indicates that 'Aleph was originally the middle consonant. דאר is doubtless, therefore, the older writing of the name. Both forms are, however, correct. In the Hebrew language 'Aleph in many cases early lost its consonantal value. The Biblical writers were therefore at liberty to write either דאר or דור.

What does the word Dor mean? Greek writers regarded the Palestinian coast cities as Greek settlements; this is indicated by the legends they give of the founding of these towns[7]. Oftentimes basing their statements on mere chance resemblances in names, they represent Greek gods or heroes as founders and thus surround the cities with the nimbus of ancient Greek origin. The name Dor is accounted for by this word-play method. Claudius Iolaus[1] declares: *καί τινες ἱστοροῦσι Δῶρον τὸν Ποσειδῶνος οἰκιστὴν αὐτῆς γεγονέναι.* Evidently this is mere legend, invented to explain the name, and has no basis beyond verbal similarity[2].

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[1] Hill, pp. LXXV, 113–118. The form ΔΩΡΙΡΙΤΩΝ on one coin is due to dittography.

[2] Δωρείτης is the same as Δωρίτης, either ει or ι having been used formerly to represent the sound ī.

[3] Another slight modification in the writing occurs in the עֵין דֹּר of Josh. 17:11. The town Endor, however, probably does not belong here. See below, pp. 51 f.

[4] The Peshitto version writes the name ܕܘܪ. This may represent either of the Hebrew forms.

[5] Prof. W. Max Müller informs me that the Egyptian form D-īra (better Da-īra) of the Papyrus Golenischeff does not show the 'Aleph. In this form, furthermore, the vowels are worthless.

[6] See pp. 39 f.

[7] *Steph. Byz., passim*; Schür., *G.J.V.*, 2:55, 56.

The Hebrew דּוֹר means ordinarily "period", "generation"[3]. In the verse Isaiah 38:12, however, it is translated "dwelling", or "habitation"[4]. In Ps. 84:11 the corresponding verb דּוּר signifies "to dwell". The Hebrew noun is evidently related to that other Hebrew noun דּוּר, "circle" or "ball". The Hebrew nouns and verb are doubtless connected with the Arabic verb دَارَ, to "move in a circle", "go about", "surround". From this root is derived the Arabic noun دَارٌ "house", "group of buildings around a court", related to دَوْرٌ "circle", "circuit".

The Assyrian sign for Du-ru is borrowed from the Sumerian, where it is given the value BAD[5]. Du-ru signifies "wall" or "fence", and then "rampart" or a "place or fortress surrounded with a rampart"[6]. It is a common and early Babylonian place name[7]. Apparently the name Du-ru is related to the Hebrew דּוּר and דּוֹר and to the Arabic دَارَ, دَارٌ and دَوْرٌ[8]. In all these forms there is the idea of something round, a circle, hence in the case of the nouns, a court, or a surrounding wall, a fortress or place surrounded by a wall[9]. A common Semitic root דּוּר with the idea of

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[1] *Steph. Byz.* s.v. Δῶρος; Müller, *Fragm. hist. graec.* VI, 363.

[2] So Schür., *loc. cit.*; Guér., *Sam.* 2:310.

[3] Brown, Driver and Briggs, *Heb. Lex.*, s.v.

[4] *Ibid.*; Marti on the passage.

[5] Strassmeier, *Assyr. und Akkad. Wörter of Cun. Inscr. of West. Asia*, vol. II, no. 2107; Ungnad in *Beitr. z. Assyr.*, vol. VI, Heft 3, pp. 27, 28; Delitzsch, *Handwörterbuch*.

[6] Muss-Arnolt, *Dict. of Assyr. Lang.*; Delitzsch, *Handwörterbuch*; *C.O.T.* on Dan. 3:1; *ibid.* II, 224; Clay, *Amurru*, p. 130.

[7] *C.O.T.* on Dan. 3:1; Marti on Dan. 3:1.

[8] In the Aramaic of the Talmud, etc., we have the form דּוּרָא (ܕܘܪ, ܕܘܪܐ), from דּוּר, "to dwell" with the meaning "village" or "town". This word likewise has the idea of something round (Levy, *Neuhebr. Wörterbuch*) and goes back to the same root as these other forms.

[9] From the idea of a surrounding wall comes the meaning "court" and then "dwelling", as in the Hebrew.

"moving in a circle," "surrounding," etc., is doubtless the basis of the Hebrew, Arabic and Babylonian forms. The name Dor undoubtedly antedates the Hebrew occupation of Palestine[1]. The same element 'dor' occurs also in the town names "Endor" and "Hammoth-Dor"[2]. Evidently the name Dor in Palestine is the same word as the Babylonian Du-ru, and like it signifies eventually "a place or fortress surrounded by a wall or rampart"[3].

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[1] It was not until a late period that the Hebrews secured possession of Dor (Josh. 17: 11, 12). They certainly did not give the name to the city.

[2] At the present time (see *S. W. P. Mem.* II, 294) there is a small village Dūrah about ten miles due east from Bethel, i. e., northeast from Jerusalem. Probably this name ought to be added to the list of Palestinian names containing the element 'dor'.

[3] Prof. Fritz Hommel (*Grundriss*, pp. 27 f.) propounds the ingenious but far-fetched theory that the name Dor is derived from the name Teucri; these were, he holds, among the sea-peoples who invaded Palestine c. 1300 B. C. But it is only by doing violence to the laws of etymology that he can obtain even the most insecure foothold for his hypothesis. The mere statement of the equation he must make is enough to rule out his theory from the realm of probabilities. This is the equation : Dor = Do'or = Dokor = T̮akkar = Zaḳḳalū = Teucri. A far cry from Dor to Teucri! Hitzig (*Philistäer*, pp. 135 ff.; cf. Schenkel, *Bib. Lex.* s.v. Dor) compares Dor with Endor lying on the same parallel, and propounds the theory that the names are Indogermanic and given by the Philistine settlers. Dor then would mean "pass", "entrance", "door". Endor would be "the other" Dor. The two would resemble the front and rear doors of a house. This theory is too refined and lacks support. The town doubtless had the name Dor long before the Philistine invasion. Hitzig's derivation of Dor from the Sanskrit dvār is improbable.

THE NAME NAPHATH DOR.

The Old Testament seems to distinguish between Dor and Naphath (or Naphoth) Dor. Whereas in Judg. 1:27 and in 1 Chron. 7:29 the simpler form "Dor" alone is used, the other passages employ the compound name. Thus, in Josh. 11:2 the name is given as נָפוֹת דּוֹר, and in 1 Kings 4:11 as נָפַת דּאֹר. In Josh. 12:23 the reference is to דּוֹר לְנָפַת דּוֹר; here the two names are clearly distinct the one from the other. In the obscure phrase, שְׁלֹשֶׁת הַנָּפֶת, of Josh. 17:11 (end) it is probable that הַנָּפֶת (the form of the word is corrupt) has reference to the preceding דּאֹר[1].

The most likely explanation of the meaning of the word נפת is the one which connects it with the old Semitic root נוּף, "to be high". Thus in Arabic the verb is used for that which is "long and high" (ناف ينوف اذا طال وارتفع), and we find Yanūf (also written Yanūfā, Tanūf, etc.) as the ancient proper name of a mountainous region in North Arabia; see Yāqūt s.v. Similarly the fourth stem participle, مُنِيفٌ, signifies "high", "lofty", and is used especially of buildings or mountains, also as the proper name of a mountainous district, a lofty fortress, and the like. The word for the overtopping hump of a camel, نَوْفٌ, comes from this root; as does also the form نَيِّفٌ, "surplus", used in the sense of "over and above". Cp. also نِيافة, "His Eminence", used as the title of cardinals[2].

In the Hebrew[3] the original meaning, "be high", seems to have been retained in the יְפֵה נוֹף, "beautiful in elevation", of Psalm 48:3[4]. Parallel with this meaning, however, and almost entirely supplanting it, arose the use of the verb, principally in the Hiphil, to mean "move to and fro", "brandish". Doubtless this signification of the root arose from the fact that the brandished object, whether spear or offering, was held *on high* in the act of brandishing or waving it. Related to the sense of the verb is the meaning of the noun נָפָה, "sieve", which is a "brandishing instrument", being held high and waved to and fro. Thus in the Hebrew two distinct meanings of the root נוף developed together, one containing the idea of height, the other that of brandishing.

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[1] See the discussion of the passage on pp. 45 ff.

[2] Dozy, *Supplément aux Dictionnaires Arabes*, 738.

[3] B.D.B., *Heb. Lex.*, I, II נוּף.

[4] So Engl. Rev. Version, Briggs, Baethgen, Duhm (who connects it with καλλιοκολώνη = Fair-hill). Wellhausen, however, characterizes the word as "suspicious", having "no appropriate meaning which can be established".

In the Aramaic[1] the verb comes to mean "wave, blow, fan", corresponding to the "brandish" of the Hebrew. The Aramaic noun נוף denotes "tree-top" "bough". There is here an evident fusion of the two meanings of the Hebrew, for the ideas of height and moving to and fro are both applicable to the top branches of a tree. But of the noun נוף in the direct sense of "height" we find no trace in the Aramaic language.

The Syriac ܢܘܦ has in like manner partially obscured the direct sense of "height," though it has retained suggestions of the idea. Thus in the Syriac of Ex. 20:25; Deut. 23:26, etc., the Afel of the verb signifies "lift up". The Ethpeel is used in the sense "to be brandished". The Ettafal form is evidently to be interpreted with the idea of elevation in the passage[2]: "The hammers of the Evil One, which were lifted up (ܐܬܬܢܝܦܘ) against them, did not shatter them". Brockelmann also cites P. Lagarde's *Analecta Syriaca* 2:146, 24 for the use of the Ettafal to mean "surrexit" (rose)[3]. The noun ܢܘܼܦܵܐ has among other meanings that of "nutus manus". This beckoning with the hand is a motion evidently connected with the verb idea "to brandish". All this evidence shows that the Syriac has partially retained the idea of "height" originally contained in the word.

From the foregoing discussion it is evident that the primitive sense of the root נוף contained in the Arabic, viz., "be high", has been partially retained in Hebrew, Aramaic, and Syriac. In the North Semitic dialect used at Dor, however, this original significance of the root seems to have been preserved, at least so far as the name of the heights inland from the coast city is concerned. A feminine nominal form נָפָה[4] from the middle weak root נוף

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[1] Levy, *Neuhebr. u. Chald. Wörterbuch.*

[2] *Ephraemi Syri* (Overbeck), 115, 19 f.

[3] I have not the volume at hand to verify this reference. Payne Smith has failed to mention this passage.

[4] B.D.B., *Heb. Lex.*, p. 632.

would seem to be the basis for the construct singular form נָפַת and for the construct plural נָפות[1]. The reference in the passages cited would then be to the "height" or "heights" of Dor[2], probably in the hilly and rolling country east of the town proper[3]. The presence of guard houses cut in the sides of the passage through the ridge near Dreihemeh[4] would indicate that a garrison was kept there. Without doubt the strategic heights behind the city were also fortified; in connection with this outpost of the harbor town a settlement would naturally grow up[5]. To this settlement on the heights, and to the district in which it lay, the name נָפַת דאר seems to have been given. The use of the name in the Old Testament, and the occurrence of the plural נָפות, suggest that a considerable territory was included in the term. In the שׁמם רמם (="High Heavens") district of Sidon, referred to on the stones of the temple of Ešmūn excavated near that city, there seems to be a sort of parallel to the term נפת דאר. This "High Heavens" of the Sidonian inscription seems to be the designation of a district or suburb of the city located, like Naphath Dor, in the hilly region to the East[6]. The existence of a town on the mainland at Tyre, called *Παλαίτυρος*[7], and the presence of similar off-shoots from the city proper in the case of many of the coast towns, add strong confirmation to our explanation of the origin of the name Naphath Dor.

Opposed to this interpretation of the name is Symmachus'[8] rendering of נפת as *ἡ παραλία*. In Joshua 11:2 he renders ובְנָפות דור

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[1] The long vowel ָ in the first syllable of the construct indicates that the root of the noun is middle weak; cf. רָ(א)מַת in B.D.B., p. 928. For נָפֶת see below.

[2] A.R.V., "height"; A.V., "region, coast, border, country". G.A.S. (*Hist. Geog.*, p. 654) defines the word as "elevation, raised land".

[3] Ges., *Thes.*, 331 says: "Excelsum fortasse promontorium". "Promontorium" is improbable, especially in view of the כָּל־נָפַת of 1 Kings 4:11, which implies a larger area than the slight promontory at Dor. The Carmel promontory would scarcely be referred to in that passage.

[4] See page 14.

[5] The ruins of Dreihemeh itself prove that such suburbs of Dor actually existed.

[6] C. C. Torrey in *Jour. Am. Orient. Soc.* XXIII, pp. 164 ff.; Cp. XXIV, p. 215; XXIX, pp. 192 f.; Eiselen, *Sidon*, pp. 144 f.

[7] Hast., *D.B.*, s.v. Tyre; *Enc. Bib.* s.v.

[8] F. Field, *Origenis Hexapla*, in locis.

מִיָּם as *καὶ εἰς τὴν παραλίαν Δὼρ ἀπὸ δυσμῶν.* Similarly he translates דּוֹר לְנָפַת דּוֹר of Josh. 12:23, (Δωρ) *τῆς παραλίας*; and שְׁלֹשֶׁת הַנָּפֶת of Josh. 17:11 is interpreted, *καὶ αἱ τρεῖς παραλίαι.* Where did Symmachus get his *ἡ παραλία*? In a comparison of the Hebrew and old Greek texts of Josh. 11:2, 3 a possible answer is to be found[1]. The מִיָּם ("on the West") of these verses is inexactly rendered in the Greek both times as *εἰς τοὺς παραλίους.* This phrase in verse 2 immediately follows Ναφεθδωρ (B, *φεναεδδώρ*). It may be that Symmachus' *εἰς τὴν παραλίαν* immediately preceding Dor was suggested to him by the almost equivalent *εἰς τοὺς παραλίους* immediately following Dor in the old Greek. That he may have been influenced by the Greek in this manner is shown to be quite possible by his procedure in verse 3. Here he follows the example of the Greek in disregarding the וְ of the וְהָאֱמֹרִי and reads: *καὶ ἀπὸ δυσμῶν τὸν Ἀμορραῖον.* It seems quite possible, therefore, that we owe Symmachus' mistranslation of נפת as *ἡ παραλία* to the inaccurate rendering of מִיָּם by the Greek. It is also possible that Symmachus was influenced in his rendering by the fact that the Dor known in his day was actually situated *ἐν τῇ παραλίᾳ.* In any case he is apparently the first to propound the theory that the name means *παραλία*, and stands almost alone in his interpretation. The probability remains that the name נפת does not refer to the coast town, but to the strategically far more important heights above the town. With this hypothesis the form of the name agrees.

In all the versions and translations the name נפת seems to have proved a stumbling-block. The Vulgate, with a different rendering each time the name occurs, is completely at a loss. In Josh. 11:2 it reads "in *regionibus* Dor iuxta mare"[2]; in Josh. 12:23, "et *provinciae* Dor"; in Josh. 17:11, "et tertia pars *urbis Napheth*"; and in 1 Kings 4:11, "omnis *Nephat Dor*". The Targum[3] evidently comes from the same source as Jerome's Vulgate renderings "regionibus" and "provinciae", for it represents נפת in Josh. 11:2; 12:23 and 1 Kings 4:11 by the construct plural פִּלְכֵי

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[1] For the Hebrew and Greek texts see the discussion of the passage on pp. 41 ff.

[2] Like the Greek the Latin here fails to understand the phrase מִיָּם.

[3] Walton's *Polyglot.*

(= Bezirk, Kreis[1]); in Josh. 17:11 the absolute תְּלָתָא פִּלְכִין occurs. This native Jewish tradition cannot be relied upon in its interpretation of the meaning of the word Naphath; it is valuable, however, in that it indicates that נפת must signify a district ("Bezirk, Kreis") adjoining Dor.

In the Peshitto of Joshua 11:2; 12:23; 1 Kings 4:11 the name is reproduced with no attempt at interpretation as ܢܶܦܬ ܕܘܿܪ. The form ܢܶܦܬ represents a Hebrew segholate noun. But from a middle weak root נוף no such segholate form is permissible. The penultimate vowel of נָפָה, construct נְפַת, must of necessity be long and its omission in the Syriac is therefore incorrect. It is quite probable that the Septuagint renderings Ναφεθδωρ, Ναφεδδωρ, Ναφεδωρ, Ναφεθα, Φεννεδδωρ, etc. (with ε in the second syllable)[2] with good reason suggested to the Syriac punctuator[3] that the form was a Hebrew segholate noun of the *qatl* type. Hence he used the equivalent Syriac form *q^e^tel*[4].

In its ܙܘܳܝ̈ܢ ܬܠܳܬ in Joshua 17:11, the Peshitto departs from precedent in regard to the word Naphath, in that an attempt is made to translate the troublesome שְׁלֹשֶׁת הַנָּפֶת of that verse. The numeral "three" before הַנָּפֶת must have seemed to demand a rendering of the noun. This ܙܘܳܝ̈ܢ is the plural of ܙܳܘܺܝܬܳܐ which is defined[5] as meaning primarily "angulus"; metaphorically it may signify "plagae caeli", and is used "de 7 terrae zonis sive climatibus"; the word is also employed in the sense of "principes". Quite a difference in meaning between נפת, "height" and ܙܳܘܝ̈ܳܐ, "anguli"! The probable explanation of ܙܳܘܝ̈ܳܐ is the following: In the Hebrew the word for "corner" is פִּנָּה; the plural is פִּנֹּת. The שְׁלֹשֶׁת preceding הַנפת would seem to the translator to indicate that the latter was plural[1]. Evidently the Syriac translator interpreted the singular נפת in the unpointed Hebrew text as the plural פנת, by the easy transposition of נ and פ. This פנֹת would then in the Syriac be translated ܙܳܘܝ̈ܳܐ, "angles" or "corners". In the Φεννεδδωρ of Josh. 11:2; 12:23 (B text) the translator may have found warrant for transposing the first two consonants. Moreover, the five towns he mentions in this verse (i. e. Bethshean, Jibleam, En-dor, Taanach and Megiddo—Dor is omitted in the Syriac), might easily have seemed to him, with his probably rather hazy idea of the relative positions of the places, to form a rough triangle, a "three corners" (ܙܳܘܝ̈ܳܐ)[2]. This supposedly triangular shape of the district might have confirmed his faith in the correctness of his rendering. But when Dor is substituted, as it should be, for Endor[3], this argument from the shape of the district would be weakened. The interpretation of Naphath as "height", we must conclude, best fits the facts and the verses in which the name occurs.

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[1] Levy, *Neuhebr. u. Chald. Wörterbuch*, s.v.; Dalman, *Aram. u. Neuhebr. Wörterbuch.*

[2] It appears that the ε in the second syllable was the vowel used by the Greek translator to indicate the short construct vowel ַ of נְפַת. Compare the rendering Ραμεθ (L) for רָמַת of Josh. 13:26—see also Josh. 19:8.—Only in Νεφαδδωρ of I Kings 4:11 (A) do we find *a* in the second syllable.

[3] It is quite certain that the Syriac translator or translators also used the Greek for comparison. Inasmuch as the Hebrew text was unpointed, it was quite natural for the punctuator to adopt in case of doubt the vowels supplied by the Greek.

[4] In Payne Smith's *Thesaurus Syriacus* ܢܶܦܬܕܘܿܪ is not given at all. This omission should be supplied, and the word listed under both ܢܦܬ and ܢܘܦ, with the observation that the Syriac punctuation is due to a mistake.—Another evident oversight in Payne Smith is the omission of any reference to the town name ܕܘܿܪ.

[5] Payne Smith, *Thes. Syr.* I, Col. 1093, under root ܙܘܐ.

The peculiar and probably impossible form הַנָּֽפֶת in שְׁלֹשֶׁת הַנָּֽפֶת (in the Hebrew of Joshua 17:11) requires some explanation. Evidently נפת is in the construct state in the other instances where it is used (viz. in Joshua 11:2; 12:23; 1 Kings 4:11), and is therefore to be translated "height of" or "heights of" Dor. As will be shown in the discussion of the verse, נפת in Josh. 17:11 was likewise *originally* a construct form. It seems probable, that is, that we have to do with a marginal gloss, שְׁלִשְׁתָּהּ נָפַת, whose purpose it was to record a variant and superior reading of the name of the *third* city in the enumeration: נפת דּאֹר instead of simply דֹאר. When the gloss strayed into the text, the ה became of necessity the article, and was attached to the following word, while נפת was pointed as a segholate noun (נֶפֶת, with the first vowel becoming ָ in the pause). But no such form would be possible from the root נוּף, nor does there seem to be any way of accounting for the form, other than the one just suggested. The proposal to pronounce the name as plural, הַנָּפֹת[1], is quite fruitless. The supposed segholate noun נֶפֶת should be omitted from our Hebrew lexicons.

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[1] See the discussion of Joshua 17:11 on pp. 45 ff.

[2] Cp. Trinacria.

[3] See the discussion of Joshua 17:11.

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[1] Budde, Holzinger, Kittel, et al.

THE NAME ṬANṬŪRA.

The name of the modern town is given by travelers under the three forms: Ṭanṭūra[1], Arabic طَنْطُورَة[2], Ṭarṭūra[3], Arabic طَرْطُورَة, and Ṭorṭūra[4], Arabic, طُرْطُورَة. In reality these are variant forms of the same name[5]; the letters r and n belong to the same organ and are therefore, especially in borrowed words, easily interchanged. The words ṭanṭūr, ṭarṭūr and ṭorṭūr (also ṭonṭūr) all denote a pointed or peaked cap, formerly worn by the Bedouin of Egypt, and still in use among the dervishes of Egypt and Syria. They also signify the horn of bone or metal used as part of the head-dress by Maronite and Druse women in Syria[6].

Dozy derives the word from the verb طَرْطَرَ, "gloriatus fuit" or "in altum sustulit, elevavit." But طَرْطَرَ does not seem to be a native Arabic verb at all, and Fraenkel[7] rightly rejects this derivation. It is, on the contrary, extremely probable that طَرْطَرَ is a denominative verb from the noun طُرْطُورٌ. In the Arabic language, therefore, no derivation can be discovered for the nominal form. In all probability the word is quite foreign to the language and has been borrowed from without. This fact doubtless accounts for the variations we find in the writing, both in its use as a common noun and as a designation of ancient Dor.

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[1] Van de Velde, *Narrat.* I:333 (1854); Wilson, *Lands of the Bible,* II:249; Wilson, *Picturesque Pal.*, pp. 114 ff.; Guérin, *Sam.* 2:305 f.; *S.W.P. Mem.* II, p. 3; G. A. Smith, *Hist. Geog.*, p. 128; Baedeker (4), pp. 231 f.

[2] *P.E.F.Q.*, 1887, p. 181, no. 38. Guérin writes تنْتورا.

[3] Chevalier d'Arvieux (c. 1700) in Labat, *Merkwürdige Nachrichten,* part II, pp. 11-13; Buckingham, *Trav. in Pal.*, p. 123 (1821).

[4] Pococke, *Description of the East,* II, p. 57 (1745); Irby and Mangles, *Travels in Egypt,* etc., p. 59 (1844); Munk, *Palestine,* p. 59 (1845)—this writer says the town is called by the Arabs Ras-el-hedjl (i. e. "head of the plain").—Instead of the feminine ending ةٌ, the three names are sometimes given with the masc. ٌ.

[5] Dozy, *Vêtements,* pp. 262 ff., Suppl. II:36; Fraenkel, *Aramäische Fremdwörter,* p. 53; *P.E.F.Q.*, 1896, p. 171; *S.W.P.*, *Name Lists,* pp. 141, 117; Arabic Dictionaries.

[6] Dozy, *loc. cit.*

[7] *Loc. cit.*

Fleischer[1], followed by Fraenkel[2] and Jastrow[3], suggests that the Aramaic טַרְטִין[4], a plural noun meaning "Kopfbedeckungen, Mützen", is connected with the Arabic طُرْطُور (and its variants) of Dozy[5]. He finds no Aramaic origin for טַרְטִין. Fraenkel raises the question whether it be a genuine Aramaic word at all. Levy[6] suggests "teretes"[7], Jastrow "turritum" (capitis ornamentum), as the Latin original of the Aramaic word.

Thus the Arabic طُرْطُور and the Aramaic טַרְטִין, both signifying head-covering or cap, stand isolated in their respective languages and yet in apparent connexion one with the other. Both seem to be borrowed, and the original must be sought in some language with which the people of Syria and Arabia came into contact. The conquest of these lands by Alexander opened the way for Greek influence upon the native languages, and the Roman settlers after Pompey brought in many Latin words; in either the Greek or the Latin, then, the original word is probably to be sought.

The Latin "tentorium" (English "tent"—in Middle Latin it is also used to signify an "umbrella"[8]) seems to be the most probable original of both طَنْطُور(ة) and טַרְטִין. In borrowed words the tendency is to conform at first rather closely to the original form; later the word is changed to accommodate it more nearly to the language into which it is taken. The Aramaic form as borrowed from the Latin "tentorium" was probably טַנְטוּר, the "ium" as usual dropping off. Metathesis in borrowed words is very common and follows no fixed laws[1]. Consequently the transposition of נ and ר in this word resulting in the form טַרְטִין is not an unusual phenomenon. The ending *īn* was later regarded as plural.

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[1] In his supplementary notes in J. Levy, *Neuhebräisches und Chaldäisches Wörterbuch*, Vol. II, p. 210 (1879).

[2] *Die Aram. Fremdwörter im Arab.*, p. 53 (1886).

[3] *Dict. of the Targumim*, etc., p. 552b (1903).

[4] Jastrow vocalizes טְרָטִין.

[5] S. Krauss (*Griech. u. Latein. Lehnwörter im Talmud*, etc., II, pp. 271 ff.) questions, but without sufficient reason, this definition of טַרְטִין.

[6] *Neuhebr. u. Chald. Wörterbuch*, s.v.

[7] Plural of adj. teres, "rounded off"; fig. "smooth".

[8] Du Cange, *Glossarium mediae et infimae Latinitatis*, s.v.

In the Arabic a somewhat similar process took place. The oldest form of the noun is very likely طَنْطُورٌ, practically a transliteration of tentor(ium). Next the n assimilated to the r of the last syllable and the form طَرْطُورٌ came into being. Last of all the vowel of the penultimate syllable was assimilated to the ʼ of the ultima, and the form طُرْطُورٌ was the result. This last is the most typically Arabic form of the three[2]. This explanation of the probable history of the word is confirmed by the fact that at the time Dozy wrote (in 1845) the word was in different stages of its development in various countries[3]. In Syria the form ṭanṭoura was used; in Egypt, ṭarṭour; and in Algiers, ṭorṭora. This illustrates also the fact that in Syria each of these forms was used at one time or another, and probably more than one form was in accepted use at the same time. It explains, too, the persistence or recurrence of the older form Ṭanṭūra in the name of the modern town, although Ṭorṭūra is apparently the more recent version of the name. These various forms of the word seem to be used interchangeably, now one, now another, being in current use.

The derivation from the Latin "tentorium" thus takes into account the various changing forms ṭanṭūr, ṭarṭūr and ṭorṭūr. Levy's suggestion[4] that טַרְטִין is derived from the rather far-fetched "teretes", as well as Jastrow's[5] proposal of "turritum" must be rejected. The derivation from "tentorium" has also this superiority to the other suggestions—we can see that the name might quite easily be applied to a head-covering. The peaked cap known under the name of ṭanṭūr bears some resemblance to a tent both in shape and in the open space within; like a tent it is a covering. The Middle Latin use of the word "tentorium" to denote "umbrella" is a suggestive parallel.

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[1] E. g. σκύφος becomes in the Talmud סופקא (S. Krauss, *Griech. u. Lat., etc.*, I, pp. 113 ff.). Cp. also Syr. קַרְדָּלָא from καλδάριον, Arab. صيف from צָנִיף, دِمَقْس from مِدَقْس (μέταξα), زَرْنِيق from ἀρσένικον, and many others.

[2] The form ṭonṭura also cited by Dozy (*loc. cit.*) is simply a variant form in which the assimilation of the vowel ʼ preceded that of the consonant ر.

[3] Dozy, *Vêtements*, pp. 262 ff.

[4] Page 29.

[5] *Ibid.*

Through what channels did this word make its way into the Aramaic and the Arabic respectively? The Aramaic-speaking peoples came into immediate contact with the Roman legions and colonists. In all probability they took over their טַנְטוּר directly from the Romans, later changing the form to טַרְטִין. The Arabs, however, did not usually come into such direct relations with the Greek and Roman settlers; it is a fact that most of their Greek and Roman loan-words seem to have come by way of the Aramaic. It is furthermore most improbable that the same word should have been borrowed independently both by the Aramaic and the Arabic. The most probable explanation is, therefore, that the Arabs took over the word from the Aramaic-speaking peoples of Syria; these in their turn had borrowed it from the Romans.

The question of how this name came to be applied to the modern village, successor to ancient Dor, must be considered. Two other instances of the use of ṭanṭūr as a proper name suggest a possible answer. Ṭanṭūr Fer'on is the name given by natives to a tomb just outside Jerusalem which is distinguished by a pointed peak[1]. A natural mound outside Acre, said to have been used as a redoubt in a siege of that city, bears the designation "Tell el-Ṭanṭūr" ("Mound of the Peak")[2]. There was probably here at one time some sort of a peaked or pointed structure from which this name was derived. Is it not probable that in both these cases the name Ṭanṭūr was applied because of a real or fancied resemblance to the peaked cap or horn (ṭanṭūr)?

The application of the name Ṭanṭūra either to the ruins or to the town[3] was made in a similar way. Until January 15th, 1895 (when it collapsed)[1], the most striking feature in the neighborhood of Ṭanṭūra was a high tower, partly in ruins, situated on a rocky promontory north of the present town. This was clearly visible at every point from Carmel to Caesarea[2]. The tower was called el-Burj or Khirbet Ṭanṭūra, and in shape resembled somewhat the peaked cap or horn (ṭanṭūr). Doubtless this, the most characteristic and dominating feature of the vicinity, gave to the place its name, Ṭanṭūra. With the changes in the name of the peaked cap itself to ṭarṭūr and ṭorṭūr[3], the name of the ruins and town changed accordingly.

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[1] This tomb is otherwise known as "Absalom's Pillar"; (Fleischer *zu Seetzen's Reisen* IV, 256; *S.W.P., Name Lists*, p. 319).

[2] *S.W.P., Name Lists*, pp. 117, 141.

[3] It is quite possible that the ruins were called Ṭanṭūra before the town received that name, perhaps even before the modern town came into being. The name does not seem to go back very far.

The ancient name of the town may have played a part in fixing the modern name Ṭanṭūra[4]. There is a marked resemblance in sound between Ṭanṭūra (or Ṭarṭūra or Ṭorṭūra) and Dora, the usual Greek form of the ancient name. In the Semitic languages the dentals d and ṭ sometimes pass over into one another[5], so that Dora might become Ṭora[6]. In fact the Tabula Peutingeriana[7] actually gives the name as Thora, which is equivalent to Ṭora. This would indicate that at a very early period (4th Cent. A. D.?) the name was sometimes pronounced with emphatic ṭ. That the distinction between د and ط is not always strictly observed in this very town is proved by the fact that Dr. Barth plainly heard the natives pronounce the name of the town as Dandora[8]. It appears quite probable, therefore, that the initial consonant of Dora was, occasionally at least, changed to emphatic ṭ, giving the form Ṭora. When later the ṭanṭūr-shaped ruined tower became the dominant feature of the landscape, the chance resemblance between the words Ṭora and ṭanṭūr may have suggested to some native punster the appropriateness of applying the name Ṭanṭūra to the ruins of Ṭora. Subsequently the inhabitants of the native town adopted the new name[1]—The feminine ending of طَنْطُورة is doubtless derived from the Aramaic determinative ending ָא[2].

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[1] Schumacher in *P.E.F.Q.*, 1895, p. 113. A. W. Cook, *Palestine*, 2:172 (1901) refers to the tower as though it were still standing. Baed. (4) (1906), pp. 231 f. makes the same error.

[2] Murray, *Handbook* (1875), p. 358; *P.E.F.Q.*, 1873, pp. 99 f.; Baed. (4) (1906), p. 231.

[3] See p. 30.

[4] The theory of Gesenius (*Thes.* 331) that Ṭarṭūra or Ṭorṭūra is to be interpreted طور دورا, "mons Dorae", is not at all probable. So Riehm, *Handwörterbuch* I, 285.

[5] Wright, *Comp. Gram.*, p. 53; Gesenius-Buhl, under ד, ט, ת; Lane 1819. In Turkish both د and ط can be pronounced either as d or t (Zenker, *Türk.-Arab.-Pers. Handwörterbuch*, pp. 418, 588.

[6] Cf. درياق = (τα) Θηριακά (Fraenkel, *Aram. Fremdw.*, p. 240). See also Ewald, *Ausführliches Lehrbuch* (1870), § 47 C.

[7] Ed. Desjardins, Seg. IX. The Tabula Peut. is probably of the 4th Cent. A. D.

[8] Ritter, *Erdkunde* XVI, 607-612; Riehm, *Handwörterbuch* I, 285. In Germany the Saxons in like manner often substitute d for t.

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[1] Compare the adoption of the reproachful term "Christians" by the early church.

[2] Supra, p. 17.

THE GOLENISCHEFF PAPYRUS.

In that important and interesting document, named after its purchaser and first publisher the Golenischeff Papyrus[1], discovered in 1891 at Khibeh in upper Egypt, mention is made of the town of Dor. Hrihor, the High Priest of Amon, although not called King, seems to be in control at Thebes at the time (c. 1100 B. C.)[2] the events narrated in this document occurred; while Nesubenebded (Smendes), afterward the first king of the 21st dynasty, rules the Delta from his seat at Tanis. In response to an oracle, Hrihor despatches an official named Wenamon to Byblos to procure cedar from Lebanon for the construction of a new sacred barge for Amon. In addition to a meager supply of money and presents the messenger is given an image of the God, called "Amon-of-the-Way", which is to serve as a passport with the kings on his journey. Having encountered extraordinary difficulties in the fulfillment of his task, Wenamon upon his return makes out a long report of the mishaps that had interfered with the success of his mission. The Golenischeff Papyrus contains Wenamon's authentic report.

As first issued by Golenischeff the Papyrus seemed to indicate that the greater part of Wenamon's transactions, including the purchase of timber, took place at Dor[3]. According to the improved arrangement of the Papyrus fragments by Erman[4], however, the major part of this story has Byblos as its scene of action.

On the 16th day of the 11th month, in the 5th year (probably of Ramses XII) Wenamon left Thebes. At Tanis he was kindly received by the ruling Nesubenebded, and sent on his way in a ship under the command of a Syrian captain. To quote from Wenamon's own account[1]: "Nesubenebded and Tentamon sent me with the ship-captain, Mengebet, and I descended into the great Syrian (H̱'-rw) sea, in the fourth month of the third season, on the first day. I arrived at Dor a city of Thekel (T̠'-k'-r'), and Bedel (B'-dy-r')[2], its king, caused to be brought forth for me much bread, a jar of wine, and a joint of beef.

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[1] Breasted, *Ancient Records of Egypt*, vol. IV, pp. 274 ff.; *Hist. of Egypt*, pp. 513 ff.; W. M. Müller, *Asien. und Eur.*, pp. 388 f.; *Mit. Vorderasiat. Ges.* (1900), pp. 30 ff.; Maspero, *Struggle of the Nations*, p. 470 (note).

[2] Breasted gives the date as the "fifth year of the last of the Ramessids (= Ramses XII, 1118-1090 B. C.), when he is but the shadow of a king"; Müller dates Ḥri-ḥor "nicht später als 1050, wahrscheinlich etwas früher".

[3] On the basis of this incorrect arrangement Guthe in 1908 (*Palästina*, pp. 74 f.) argues that in Wenamon's time the neighborhood of Dor was thickly wooded. Inasmuch as Erman had rearranged the fragments of the Papyrus in 1900 Guthe need not have made this error.

[4] In *Zeit. für Ägypt. Sprache* (1900) no. 38, pp. 1 ff.; Breasted, Müller and other scholars follow Erman's improvement in the order of fragments.

"Then a man of my ship fled, having stolen:

— (vessels) of gold (amounting to)	5 deben
4 vessels of silver, amounting to	20 deben
A sack of silver	11 deben
(Total of what) he (stole)	5 deben of gold 31 deben of silver.

(About 1⅕ lbs. of gold and about 7½ lbs. of silver—Breasted.)

"In the morning then I rose and went to the abode of the prince, and I said to him: 'I have been robbed in thy harbor. Since thou art the king of this land, thou art therefore its investigator, who should search for my money. For the money belongs to Amon-Re, King of Gods, the lord of the lands; it belongs to Nesubenebded, and it belongs to Hrihor, my lord, and the other magnates of Egypt; it belongs also to Weret (W'rty), and to Mekmel[3] (M-k'-m-rw), and to Zakar-Baal (T'-k'-rw-B-'-r')[4], the prince of Byblos[5]'."

"He said to me: 'To thy honor and thy excellence! but behold I know nothing of this complaint which thou hast lodged with me. If the thief belonged to my land, he who went on board (Lit., descended into) thy ship, that he might steal thy treasure, I would repay it to thee from my treasury, till they find thy thief by name; but the thief who robbed thee belongs to thy ship. Tarry a few days here with me and I will seek him'."

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[1] Breasted, *Ancient Records*, IV, pp. 278–9; cp. Erman in *Zeit. für Ägypt. Sprache*, no. 38, pp. 6 ff.

[2] Müller (*As. und Eur.*, p. 388) transliterates the name $\overset{a}{\text{B}}$i-d-$\underset{\circ}{\text{ï}}$ra.

[3] There is here given first the Egyptians who sent the valuables, and then the Syrians to whom it was to be paid.

[4] =זכר־בעל.

[5] This indicates the locality where Wenamon expects to buy the timber.

"When I had spent nine days moored in his harbor, I went to him and said to him: 'Behold, thou hast not found my money (therefore let me depart) with the ship-captain and with those who go . . .'" (four lines are lost here and an uncertain amount more.)

(Some twenty-three additional lines are missing here) " . . . the sea. He said to me: 'Be silent . . .'" (three lines containing but a few broken words; among them a reference to searching for the thieves. The journey from Dor to Tyre is somewhere in these lacunae.)

On his way from Tyre to Byblos, Wenamon in some way meets some of the Thekel with a bag (?) of silver weighing 30 deben. He seized this as security for the 31 deben of silver he had lost. Four months and 12 days after his departure from Thebes, he arrives at Byblos. Having come in an ordinary merchant ship without rich gifts, Wenamon is ordered by Zakar-Baal to leave. But after 19 days one of the noble youths attendant upon Zakar-Baal falls into a prophetic ecstasy and demands that Wenamon be summoned and treated with honor. The king in conversation with Wenamon asserts his independence of Egypt and requires Wenamon to send to Egypt for part payment of the timber he wishes to secure. After the return of Wenamon's messenger with gold and silver and other valuables, the desired logs are delivered by the king. Upon promising to pay the balance Wenamon is permitted to embark. But to his despair he discovers eleven Thekel (Takkara) ships outside the harbor, waiting to arrest him, doubtless because of his seizure of silver from the Thekel he had met between Tyre and Byblos. Zakar-Baal on the following day calls the Thekel fleet to an interview, during which Wenamon embarks and escapes. Contrary winds, however, drive him to Cyprus (Alasa), where he barely escapes being killed by the populace. He manages to secure an audience with the Queen and is protected by her. The report here breaks off and we do not know how Wenamon finally managed to reach Egypt.

The Thekel (or Takkari), whom Wenamon finds settled at Dor, had begun entering Syria under Ramses III (1198–1167 B. C.) 80 years or more before. In his eighth year Ramses met and decisively routed in Syria by land and sea a number of maritime tribes who had made common cause with the invading Libyans.

According to the Medinet Habu inscriptions[1], these tribes consisted of the Peleset (Pw-r'-s'-ṯ), the Thekel (Ṯ'-k-k'-r'), the Shekelesh (Š'-k-rw-š'), the Denyen (D'-y-n-yw) and the Weshesh (W'-š'-š'). Papyrus Harris[2] adds to this list the Sherden. These sea-peoples seem to have come from the coast and islands of Asia Minor[3]. Müller[4] rejects the etymological identification of the name Takkari with Teucri[5], on the ground that the double k makes this impossible. Maspero[6] and Breasted[7] are inclined to see in them the Siculi (or Sikeli).

Apparently these invading tribes received only a temporary setback in their defeat by Ramses III. In the reference in Wenamon's account to the presence of Takkari at Dor we have proof that within less than a hundred years Ramses' temporarily defeated opponents have firmly established themselves in Syria[8]. Their realm seems to have extended along the entire coast from Carmel to the Egyptian border. In the north were the Takkari; farther south were settled the Philistines and the remaining tribes[9]. Whether they came as a genuine "Völkerwanderung"[10], or simply as mercenaries and robbers[11] who afterward settled down to agricultural and commercial life, there is hardly sufficient evidence to decide.

Under the weak successors of Ramses III these tribes seem to have established their complete independence. It has been shown that the Egyptian messenger, Wenamon, is treated with scant ceremony both at Dor and at Byblos[1]. The king of Dor pays little attention to the complaint about the robbery, and later the Takkari fleet has no hesitation in pursuing Wenamon.

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[1] Breasted, *Anc. Rec.*, IV, pp. 36 ff.; Müller, *As. u. Eur.*, pp. 359 ff.

[2] Breasted, *Anc. Rec.*, IV, § 403.

[3] Müller, *As. u. Eur.*, pp. 360 f.; ibid., *Mit. Vorderasiat. Ges.*, V (1900), p. 4; Hommel, *Grundriss*, pp. 27 f.; G. A. Smith, *Hist. Geog.*, p. 197.

[4] *Mit. V. A. Ges.*, V (1900), p. 1.

[5] Hommel, *Grundriss*, pp. 27 f.

[6] *Struggle*, p. 464.

[7] *Anc. Rec.*, IV, p. 33.

[8] Maspero's theory (*Struggle*, p. 470) that Ramses III planted his captive Pulusati, etc., along this coast to safeguard the Egyptian frontier is improbable and lacks confirmation. More probably he was unable to keep them back.

[9] Paton, *Early Hist. of Pal. and Syria*, p. 148; W.M.M. in *Mit. V. A. Ges.* (1900), p. 1; Ed. Meyer, in *Enc. Bib.* III, 3735.

[10] So Breasted, IV, p. 33; Ed. Meyer, l. c.

[11] W.M.M., *As. u. Eur.*, p. 360.

Dor seems to be at this period a town of some importance. A fleet is maintained and the king carries himself with apparent dignity and confidence. He seems to have very little fear before the accredited representative of Egypt. The tribal name of the inhabitants of Dor (i. e. Takkara) does not again appear either in the Old Testament or in other literature[2]. Probably they were absorbed into one stock with the more important and powerful Philistines[3].

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[1] We must, however, make due allowance for the probability that Wenamon's story is colored by his desire to justify his failure to fulfill his mission. By picturing the kings as unfriendly he would more easily excuse his failure.

[2] Unless "alu Zaḳ-ḳa-lu-û" of 4R34, No. 2 refers to them. See below, pp. 39 f.

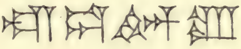
[3] Erman, *Zeit. für Ägypt. Sprache*, 38:1 ff.

DOR IN ASSYRIAN LITERATURE.

The town Dor is mentioned, together with other cities of Syria, in an Assyrian geographical list (2R53, No. 1, Rev.). Unfortunately this list is only a fragment and we are unable to determine its exact context. Probably it is the enumeration of conquests or tributary cities of some Assyrian ruler[1]. The transliteration of lines 35 to 41 follows[2]:

line 35	^{alu}Di-maš-ḳa	(Damascus)
	^{alu}Ḳar-ni-ni	(?)
	^{alu}Ḥa-ma-at-(ti)	(Hamath)
	^{alu}Ḥa-ta-rik-(ka)	(Hadrach)
	^{alu}Man-ṣu-a-te	(Mansuat)
line 40	^{alu}Du-'-ru	(Dōr)
	^{alu}Ṣu-bat, ^{alu}Ḥa-ma-a-tu	(Zōbā; Chamāth)

Dor is written:



Again in a similar fragmentary list of Syrian cities, whose exact purport is unknown, Dor occurs, this time between Damascus and Megiddo (2R53, No. 4)[3]:

line 55	^{alu}Sa-me-ri-na	(Samaria)
	^{alu}Di-maš-ḳa	(Damascus)
	^{alu}Du-'-ru	(Dōr)
	^{alu}Ma-gi-du-u	(Megiddo)
	^{alu}Man-ṣu-a-tu	(Mansuat)
line 60	^{alu}Ṣi-mir-ra	(Zemār)[4]

Here again Dor is written with medial ' (= א).

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[1] G. Rawlinson (*Anc. Monarchies* II, p. 397 f.) evidently with this list and the one next to be discussed in mind, names Tiglath-Pileser III as the ruler in question; he adds that "Dor was even thought of sufficient consequence to receive an Assyrian governor". The information contained in the two references to the town does not furnish material on which to base either of his deductions.

[2] Following Schrader's transliteration in *Keilinschriften und Geschichtsforschung*, p. 122.

[3] *Ibid.*, p. 121.

[4] The balance of the fragment (lines 61, 62) is broken off.

As in Josh. 12:23; 17:11; Judg. 1:27; 1 Chron. 7:29; Dor is mentioned in this latter list in close connection with Megiddo. It would seem that these cities were connected in a way that led naturally to their being mentioned together. The fact that Dor appears in the list with these other cities of northern Syria makes it practically certain that the city is the one we are discussing, and not some other of the numerous cities with that name. The writing with a medial breathing ' corresponds to the more correct דאר. Apparently Dor is at the time of this inscription (sometime before 605 B. C.) a town of enough importance to be worth enumerating among the principal cities of the West. The town is not unknown in the land of Assyria.

Hommel[1] is inclined to identify the city Zaḳḳalū (Zaḳ-ḳa-lu-ú) of 4R34, No. 2 with Dor. This document is a letter written by a high Babylonian official to an Assyrian[2]. In it mention is twice (lines 41, 45) made of "^{alu}Zaḳ-ḳa-lu-ú," where one of them had waited (in vain?) a whole day for the other. The identification of Dor with Zaḳ-ḳa-lu-ú is, however, very precarious. The name as we have it in Egyptian references[3] is written with simple k (כ) and not as here, with ḳ (ק). Furthermore, we have no evidence that Dor was ever called Zaḳḳara or the "Zaḳḳalite town." Hommel's contention[4] that the name Dor is derived from Takkar might, if true, indicate that Dor is the town referred to in this letter; but it has been shown that his derivation of the name lacks all semblance of probability. Until we find good evidence that Dor was also called Zaḳḳara or "the Zaḳḳalite town", we must omit 4R34, No. 2 from the list of references to Dor in Assyrian or Babylonian literature.

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[1] *Geschichte*, pp. 432 f.; *Proceedings of the Society of Biblical Archaeology*, (1895) 17:203; *Anc. Heb. Trad.*, pp. 233 f.

[2] Tiele (*Bab-Assyr. Geschichte*, p. 145), however, holds that the letter is from an Assyrian to a Babylonian prince.

[3] Breasted, *Anc. Rec.* IV, p. 278 (Ṯ'-k'-r), pp. 36 ff. (Ṯ'-k-k'-r'); Müller, *As. u. Eur.*, p. 388; Hommel, *Grundriss*, pp. 27 ff.

[4] *Grundriss*, *l. c.*; see above p. 20.

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DOR IN THE OLD TESTAMENT AND THE APOCRYPHA.

JOSHUA 11:2.

The first Biblical reference[1] to Dor is in Joshua 11:2, in connection with the conquest of Canaan by Joshua. In chapter 10 the subjugation of the southern portion of the land has been described. Chapter 11 continues the story by narrating the events connected with Joshua's conquest of the kings in the northern half of Canaan. According to this account Jabin, King of Hazor[2], forms a coalition of these northern kings to oppose Joshua. He sends to Jobab, King of Madon, and to the Kings of Shimron and Achshaph (Josh. 11:1); he also sends (Josh. 11:2):

(2) וְאֶל־הַמְּלָכִים אֲשֶׁר מִצְּפוֹן בָּהָר וּבָֽעֲרָבָה נֶגֶב כִּנֲרוֹת וּבַשְּׁפֵלָה
וּבְנָפוֹת דּוֹר מִיָּם
(3a) הַכְּנַעֲנִי מִמִּזְרָח וּמִיָּם וְהָאֱמֹרִי וְהַחִתִּי וגו׳

"And to the kings who were on the north, in the hill-country, and in the Arabah over against[3] Chinneroth, and in the Shephelah and in the heights of Dor on the west, to the Canaanites on the east and on the west, and the Amorites, and the Hittites, etc." The Greek (B) reads: (2) *καὶ πρὸς τοὺς βασιλεῖς τοὺς κατὰ Σιδῶνα τὴν μεγάλην, εἰς τὴν ὀρεινὴν καὶ εἰς τὴν Ῥαβὰ ἀπέναντι Κενερώθ, καὶ εἰς τὸ πεδίον καὶ εἰς Φεναεδδώρ,* (3) *καὶ εἰς τοὺς παραλίους* (3)*Χαναναίους ἀπὸ ἀνατολῶν, καὶ εἰς τοὺς παραλίους Ἀμορραίους καὶ Εὐαίους, κτλ.* Variant: For *Φεναεδδώρ*, A* gives *Ναφεδωρ*, A'F offer *Ναφεθδωρ.* The form *Φεναεδδώρ* has clearly arisen from the simple transposition of the syllables *να* and *φε* in *Ναφεθδώρ.* The second *ε* in *φεναεδδωρ* may represent a misreading of the uncial letter *θ* as *ε*; the doubling of the *δ* may be a correction from *φεννεδδώρ* of Josh. 12:23. Apparently this Greek form is based, not on נָפוֹת as in the text here, but on נֶפֶת as in the other passages[4].

For מִצְּפוֹן in the Hebrew of verse 2 we should probably read מִצָּפוֹן, since there is no occasion for the use of the status constructus here[1]. The reading of the Greek: *κατὰ Σιδῶνα τὴν μεγάλην*, is certainly to be rejected. *Σιδῶνα* arose from a misreading of מצפון as מצדון. It would seem that the Greek translator read here מצדון רבה בהר instead of מצפון בהר [2]. Quite possibly he was influenced by צִידוֹן רַבָּה of verse 8. The Greek has *ἀπέναντι* for the hardly possible נֶגֶב and points, therefore, to נֶגֶד as the original reading[3]. מָיִם is read by the Greek with the following verse and mistranslated, *καὶ εἰς τοὺς παραλίους, κτλ.*; the Greek translates מָיִם of verse 3 in exactly the same way; whereas מָיִם should be rendered "on the West", or "westward"[4].

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[1] That is, first in order of book and chapter, not in order of composition.

[2] Cf. Judges 4:2, 17.

[3] See below for change to נֶגֶד.

[4] The large number of variants in the writing of this name illustrates how proper names change in transmission from one language to another.

The reference in verse 2 is throughout to regions or districts. הַר refers to the mountainous territories in northern Samaria and Galilee[5]; by עֲרָבָה נֶגֶד כִּנֲרוֹת is probably meant the Jordan valley near the Sea of Galilee and perhaps also the plain to the west of the sea[6]; שְׁפֵלָה refers to the low hills between the Central Range and the coast plain[7]. In like manner the term נָפוֹת דּוֹר must signify the hilly district east of Dor including the ridge extending from Carmel to Caesarea[8].

Verse 2 seems to be a later insertion in the text, dating from the earlier part of the Persian Period[9]. So far as the event it purports to record is concerned, it has very little historical value. It does, however, reflect the conviction of a later supplementer that the region Naphath Dor was important in earlier times. Doubtless he based this conclusion upon the prominence of the district and of the city of Dor in his own time. Not even are names assigned to the shadowy kings of these vaguely defined districts. We can hardly suppose, therefore, that the late writer of this verse had any distinct individuals in mind.

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[1] Bennett, *S.B.O.T.*; Holzinger, *K.H.A.T.*; Steuernagel.

[2] Margolis in *A.J.S.L.*, XXVIII (1911), p. 12.

[3] Steuernagel, et al.

[4] The translator's knowledge of Hebrew is perhaps defective (*A.J.S.L.*, XXVIII, p. 13).

[5] Steuernagel, Holzinger.

[6] *Ibid.*

[7] Not the coast plain itself (as in Steuernagel and Holzinger), G.A.S., *Hist. Geog.*, p. 203; S. R. Driver in Hast., *D.B.*, III, 894.

[8] See the discussion of the name Naphath Dor, pp. 21 ff.

[9] Bennett assigns it to D^2; Carpenter and Battersby to R^d, an expansion of vv. 1, 4–9 (J); Steuernagel to D^2; Holzinger to "JE^s? D? jünger?" Verse 1 is much older.

JOSHUA 12:22, 23.

The twelfth chapter of Joshua gives a list of the kings subdued by the Israelites in the course of their conquest of Canaan, verses 1–6 covering the East-Jordan region and verses 7–24 the rulers west of the Jordan. In the list of kings defeated by Joshua in the West-Jordan country appears the King of Dor. Josh. 12:22, 23 reads:

(22) מֶלֶךְ קֶדֶשׁ אֶחָד
מֶלֶךְ יָקְנְעָם לַכַּרְמֶל אֶחָד׃
(23) מֶלֶךְ דּוֹר לְנָפַת דּוֹר אֶחָד
מֶלֶךְ גּוֹיִם לְגִלְגָּל אֶחָד

The King of Kedesh:	One.
The King of Jokneam, i. e., the Carmel district:	One.
The King of Dor, i. e., the Height of Dor:	One.
The King of the Nations, i. e., the District (= Galilee):	One[1].

The Greek (B) reads: (21, 22) *βασιλέα Κάδης*, Βασιλέα Ζακάχ, Βασιλέα Μαρεδὼθ *καὶ βασιλέα* Ἰεκὸμ *τοῦ* Χερμέλ, (23) *βασιλέα* Ἐλδὼμ *τοῦ* Φεννεδδώρ, *βασιλέα* Γεεὶ *τῆς* Γαλειλαίας.

Codex A is here, as usual, far superior to B. In verses 21, 22 both the order and name-forms of the Hebrew are much more faithfully and more correctly reproduced by A. 1t has Θαναχ, Μαγεδδων, Κεδες and Ιεκοναμ. In verse 23, A offers instead of Ἐλδωμ the form Αδδωρ. Evidently Αδ is the combination of the final vowel of *βασιλέα* with the initial consonant of Δωρ—a clear case of dittography. A also offers in this verse the superior reading, Ναφεδδωρ. In this form the δδ instead of θδ is probably to be accounted for by the fact that, in the cursive manuscripts, θ and δ are written so much alike that they are easily confused[2]. For Γεει, A reads Γωειμ, and for Γαλειλαίας it has Γελγεα (i. e. Γελγελ, Λ in an uncial manuscript having been read A). In this last instance, Γαλειλαίας of B is doubtless to be preferred to the readings of A and the Hebrew. In agreement with the B-text the Hebrew here ought probably to be emended so as to read לַגָּלִיל[1]. It is probable that, as in כַּרְמֶל of verse 22, נָפַת דּוֹר of verse 23 and שָׁרוֹן in verse 18, a district is referred to. We know of no district called גִּלְגָּל; but the name גָּלִיל is applied to the region on the northern border of Israel's territory[2]. Doubtless this is the district here meant.

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[1] See the discussion following, for departures from the usual rendering of this passage.

[2] Maunde Thompson, *Hdbk. of Gk. and Lat. Paleography*, Table opp. p. 148. There may also have been an unconscious assimilation in speech or writing of the θ to the δ.—For a fuller discussion of the word, see the chapter on Naphath Dor.

The reference in verse 23 above is to דּוֹר לְנָפַת דּוֹר. The preposition לְ of לְנָפַת is rendered by the American Revised Version (and usually) "in". The same interpretation of לְ is generally given in לְגִלְגָּל (verse 23) and לַכַּרְמֶל (verse 22)[3]. In all these cases, however, the preposition seems rather to be meant in the sense of "namely", "i. e." This usage is exactly the same as that found in classical Arabic[4]. An excellent illustration of this use of לְ is found in Ezek. 44:5: לְכָל־חֻקּוֹת בֵּית־יְהוָה וּלְכָל־תּוֹרֹתָיו "Namely, all the statutes of the house of Jehovah and (namely) all its laws". Again in Ezek. 44:9 the expression, לְכָל־בֶּן־נֵכָר should be rendered: "namely (or "i. e.") every foreigner". This use of לְ seems to have escaped the translators of our English Bible.

In accord with this interpretation we must translate Joshua 12:22, 23 above:

(22)	The king of Kedesh:	One[5].
	The king of Jokneam (i. e., Carmel):	One.
(23)	The king of Dor (i. e., the Heights of Dor):	One.
	The king of Nations (i. e., the District):	One.

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[1] So Dillman, Kittel, Holzinger, Bennett, Steuernagel.

[2] B.D.B. s.v. גָּלִיל.

[3] To these instances should be added לַשָּׁרוֹן in verse 18. This verse must be emended to read מֶלֶךְ אֲפֵק לַשָּׁרוֹן אֶחָד (So Bennett, Holzinger, Steuernagel, et al.).

[4] See especially Torrey, *Ezra Studies*, pp. 121f., 273; *Comp. and Hist. Value of Ezra-Neh.*, p. 18; Wright, *Gram.* (3), II, 151 C; Ges.-Buhl (13), *Handwörterbuch*, under ל, § 8b.

[5] The numeral "one" does not appear in the Greek, which is here quite corrupt.

Similarly the emended text of verse 18 is to be rendered:

(18) The king of Aphek (i. e., Sharon): One.

In all these instances either the original compiler of the list or a later glossator introduces by means of the preposition לְ a more comprehensive designation of the whole realm ruled by each king. By the "King of Dor", accordingly, is meant the ruler not only of Dor proper but as well of the whole district above the city known as Naphath Dor[1].

The list of kings in Joshua 12:7–24 seems to come from a writer of the Deuteronomic school[2]. It dates, therefore, from the Persian period. Inasmuch as Dor can hardly have come under the domination of the Hebrews until a much later date[3], it is most improbable that Joshua really defeated the King of Dor. Consequently the notice in verse 23 merely reflects the opinion of a Deuteronomic editor writing in the Persian period as to the probable extent of Joshua's conquests.

JOSHUA 17:11-13, JUDGES 1:27, 28, 1 CHRONICLES 7:29.

Following the account of the conquest of Palestine in the first half of the book, Joshua 12-24 deals with the apportionment of the territory. Chapters 16, 17 give a very confused description of the borders of the "children of Joseph," i. e., Ephraim and the western half-tribe of Manasseh. After the south border of the two tribes as a whole, and the borders of Ephraim have been described in chapter 16, Joshua 17 continues with the borders of Manasseh. Verses 11-13 then give a list of cities located in Issachar and Asher ideally assigned to Manasseh, of which the tribe was, however, unable to secure possession.

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[1] The use here of Naphath Dor in parallel construction with the districts Carmel, Galilee and Sharon (compare Josh. 11:2) is fairly conclusive evidence that the term refers to a region dependent on or adjacent to the city of Dor, and is not merely another name for the city itself. See the chapter on Naphath Dor.

[2] Bennett assigns it to D^2; Carpenter and Battersby to R^d; Steuernagel to the Deut. school. Holzinger is inclined to assign it to P^g, though perhaps in dependence on JE.

[3] It is open to doubt whether Dor itself ever came under Hebrew rule. At least there is no satisfactory evidence to prove that it did.

(11) וַיְהִי לִמְנַשֶּׁה בְּיִשָּׂשכָר וּבְאָשֵׁר בֵּית־שְׁאָן וּבְנוֹתֶיהָ וְיִבְלְעָם
וּבְנוֹתֶיהָ וְאֶת־יֹשְׁבֵי דֹאר וּבְנוֹתֶיהָ וְיֹשְׁבֵי עֵין־דֹּר וּבְנֹתֶיהָ
וְיֹשְׁבֵי תַעְנַךְ וּבְנֹתֶיהָ וְיֹשְׁבֵי מְגִדּוֹ וּבְנוֹתֶיהָ שְׁלֹשֶׁת הַנָּפֶת
(12) וְלֹא יָכְלוּ בְּנֵי מְנַשֶּׁה לְהוֹרִישׁ אֶת־הֶעָרִים הָאֵלֶּה וַיּוֹאֶל
הַכְּנַעֲנִי לָשֶׁבֶת בָּאָרֶץ הַזֹּאת :
(13) וַיְהִי כִּי חָזְקוּ בְּנֵי יִשְׂרָאֵל וַיִּתְּנוּ אֶת־הַכְּנַעֲנִי לָמַס וְהוֹרֵשׁ לֹא
הוֹרִישׁוֹ

(11) "And Manasseh had in Issachar and in Asher: Beth-shean and its dependencies, and Ibleam and its dependencies, and the inhabitants of Dor and its dependencies, and the inhabitants of Endor and its dependencies, and the inhabitants of Taanach and its dependencies, and the inhabitants of Megiddo and its dependencies (Third in it is Naphath)[1].

(12) Yet the children of Manasseh were unable to dispossess those cities; but the Canaanites persisted in dwelling in that region.

(13) And it came to pass, when the children of Israel became strong enough, that they put the Canaanites in the working gangs, but by no means dispossessed them."

The Greek (B) reads:

(11) *καὶ ἔσται Μανασσὴ ἐν Ισσαχὰρ καὶ ἐν Ἀσὴρ Καιθοὰν καὶ αἱ κῶμαι ἀυτῶν, καὶ τοὺς κατοικοῦντας Δὼρ καὶ τὰς κώμας αὐτῆς, καὶ τοὺς κατοικοῦντας Μαγεδδὼ καὶ τὰς κώμας αὐτῆς, καὶ τὸ τρίτον τῆς Μαφετὰ καὶ τὰς κώμας αὐτῆς.*

(12) *καὶ οὐκ ἠδυνάσθησαν οἱ υἱοὶ Μανασσὴ ἐξολεθρεῦσαι τὰς πόλεις ταύτας καὶ ἤρχετο ὁ Χαναναῖος κατοικεῖν ἐν τῇ γῇ ταύτῃ·*

(13) *καὶ ἐγενήθη καὶ ἐπεὶ κατίσχυσαν οἱ υἱοὶ Ἰσραήλ, καὶ ἐποίησαν τοὺς Χαναναίους ὑπηκόους, ἐξολεθρεῦσαι δὲ αὐτοὺς οὐκ ἐξωλέθρευσαν.*

In v.11 instead of *Καιθοαν*, B$^{\mathrm{a\ mg}}$A read more correctly *Βαιθσαν*. For *Δωρ*, B$^{\mathrm{ab\ mg}}$ reads *Ἐδωρ*. A has the form *Μαγεδδωρ*. A inserts before *καὶ τὸ τρίτον* the phrase: *καὶ τοὺς κατοικοῦντας Ταναχ καὶ τὰς κώμας αὐτῆς*. For *Μαφετα*, A has *Ναφεθα*. V.12: A has *ἠδυνήθησαν*. For *ἤρχετο*, A reads *ἤρξατο* (Cp. Judg. 1:27). V.13: A omits the second *καὶ*. For *ἐπεὶ κατίσχυσαν* B$^{\mathrm{b}}$A have *ἐπικατίσχυσαν*. For *ἐξολεθρεῦσαι*, A reads *ὀλεθρεῦσαι*. In verse 11 the rendering of וַיְהִי in the Greek as a future, *ἔσται*, is probably due to the carrying over into the narrative of the idea of divine command suggested by the reference in verse 4 to Moses' injunctions. That this is actually meant to be a future form is proved by its repetition in verses 8, 9, 10, and by *καταβήσεται* in verse 9.—In verses 12, 13, הוֹרִישׁ, "to dispossess," is rendered *ἐξολεθρεῦσαι*, "to destroy utterly." (Cp. *ἐξαίρων* in Judg. 1:27 (B), rendered by A there as *ἐκληρονόμησεν*). This use of *ἐξολεθρεῦσαι* is another instance of free interpretation by the translator, who was doubtless influenced in his rendering by the record of the divine injunction to put these cities under the ban (Cp. Josh. 8:2; 6:17, 21, 24).

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[1] See discussion below.

Included in the first chapter of Judges we have a parallel to the account in Joshua 17:11-13. According to this chapter the conquest of Canaan was not achieved by a single irresistible movement of united Israel (as in the book of Joshua), but by a succession of attacks by single tribes or by coalitions consisting of several tribes bound together by ancient ties or common interests. On the whole the representation in Judges is more historical than that in Joshua. After the narration of positive successes by Judah and Simeon (1:1-20) and by the "House of Joseph" (1:22-26), there follows a series of notices describing the failure of particular tribes to dispossess the native Canaanites. The first of these notices (1:27, 28) deals with the tribe of Manasseh, in whose allotted territory was situated the town of Dor:

(27) וְלֹא הוֹרִישׁ מְנַשֶּׁה אֶת־בֵּית־שְׁאָן וְאֶת־בְּנוֹתֶיהָ וְאֶת־תַּעְנַךְ
וְאֶת־בְּנֹתֶיהָ וְאֶת־יֹשְׁבֵ(י) דוֹר וְאֶת־בְּנוֹתֶיהָ וְאֶת־יֹשְׁבֵי יִבְלְעָם
וְאֶת־בְּנוֹתֶיהָ וְאֶת־יוֹשְׁבֵי מְגִדּוֹ וְאֶת־בְּנוֹתֶיהָ וַיּוֹאֶל הַכְּנַעֲנִי
לָשֶׁבֶת בָּאָרֶץ הַזֹּאת׃
(28) וַיְהִי כִּי־חָזַק יִשְׂרָאֵל וַיָּשֶׂם אֶת־הַכְּנַעֲנִי לָמַס וְהוֹרֵישׁ לֹא
הוֹרִישׁוֹ׃

(27) "And Manasseh did not dispossess Beth-shean and its dependencies, nor Taanach and its dependencies, nor the inhabitants of Dor and its dependencies, nor the inhabitants of Ibleam and its dependencies, nor the inhabitants of Megiddo and its dependencies; but the Canaanites persisted in dwelling in that region.

(28) And it came to pass, when Israel became strong enough, that they placed the Canaanites in the working gangs, but by no means dispossessed them."

The Greek reads:

(27) *καὶ οὐκ ἐξῆρεν* Μανασσὴ *τὴν* Βαιθσάν, *ἥ ἐστιν* Σκυθῶν *πόλις, οὐδὲ τὰς θυγατέρας αὐτῆς οὐδὲ τὰ περίοικα αὐτῆς, οὐδὲ τὴν* Θανὰκ *οὐδὲ τὰς θυγατέρας αὐτῆς, οὐδὲ τοὺς κατοικοῦντας* Δὼρ *οὐδὲ τὰς θυγατέρας αὐτῆς, οὐδὲ τὸν κατοικοῦντα* Βαλὰκ *οὐδὲ τὰ περίοικα αὐτῆς οὐδὲ τὰς θυγατέρας αὐτῆς, οὐδὲ τοὺς κατοικοῦντας* Μαγεδῶ *οὐδὲ τὰ περίοικα αὐτῆς οὐδὲ τὰς θυγατέρας αὐτὴς, οὐδὲ τοὺς κατοικοῦντας* Ἰεβλαὰμ *οὐδὲ τὰ περίοικα αὐτῆς οὐδὲ τὰς θυγατέρας αὐτῆς· καὶ ἤρξατο ὁ* Χαναναῖος *κατοικεῖν ἐν τῇ γῇ ταύτῃ.*

(28) *καὶ ἐγένετο ὅτε ἐνίσχυσεν* Ἰσραήλ, *καὶ ἐποίησεν τὸν* Χαναναῖον *εἰς φόρον, καὶ ἐξαίρων οὐκ ἐξῆρεν αὐτόν.*

For *ἐξῆρεν* in v. 27 of the Greek, A reads *ἐκληρονόμησεν.* (For Βαλακ it has Βαλααμ; this form stands in place of יִבְלְעָם of the Hebrew text and corresponds to it. (Cp. Βαλααδ in the Greek of 1 Chron. 7:29.) Evidently the initial י has been lost because the final י of the preceding יֹשְׁבֵי confused the copyist. (Cp. the copyist's error in the loss of the final י of ישׁבי before דוֹר in this same verse.) Later, since the name Jibleam seemed to have been omitted in this list, someone added it *after* Megiddo, thus really repeating the name for Jibleam and giving six instead of five towns[1]. For *περίοικα* 1°, A gives *περισπόρια*; he omits it 2°, 3°, 4°. *ἥ ἐστιν Σκυθῶν πόλις* is probably an interpretative comment by the translator, or else a later gloss that has strayed into the text.

Again in 1 Chron. 7:29 there appears a notice similar to and doubtless derived from those in Josh. 17:11 and Judg. 1:27. In his notices contained in chapters 4-7 concerning the genealogies, history and military strength of the tribes, the Chronicler in chap. 7:14-29 groups together the two sons of Joseph. Verses 14-19 of chapter 7 give the genealogy of Manasseh, while verses 20-27 trace Ephraim's genealogy; in verse 28 the cities on the southern border of Ephraim are listed, while verse 29 gives the principal cities on the northern border of Manasseh. Instead of mentioning all the cities belonging to these two tribes, the writer describes their combined territories by naming those cities on the southern and northern boundaries. In his enumeration of the towns on the north, Dor is included (v. 29).

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[1] In the *Enc. Bib.*, Article "Dor," only four towns, viz., "Bethshean, Ibleam, Megiddo and Dor," are mentioned in Judg. 1:27. Evidently the omission of Taanach is an oversight.

(29) וְעַל־יְדֵי בְנֵי־מְנַשֶּׁה בֵּית־שְׁאָן וּבְנֹתֶיהָ תַּעְנָךְ וּבְנֹתֶיהָ מְגִדּוֹ
וּבְנוֹתֶיהָ דּוֹר וּבְנוֹתֶיהָ בְּאֵלֶּה יָשְׁבוּ בְּנֵי יוֹסֵף בֶּן־יִשְׂרָאֵל

The Greek reads:

(29) *καὶ ἕως ὁρίων υἱῶν* Μανασσή, Βαιθσαὰν *καὶ αἱ κῶμαι αὐτῆς*, Θαλμὴ *καὶ αἱ κῶμαι αὐτῆς· καὶ* Βαλὰδ *καὶ αἱ κῶμαι αὐτῆς*, Μαγεδδεὶ *καὶ αἱ κῶμαι αὐτῆς*, Δὼρ *καὶ αἱ κῶμαι αὐτῆς· ἐν ταύτῃ κατῴκησαν οἱ υἱοὶ* Ἰωσὴφ *υἱοῦ* Ἰσραήλ.

(29) "And upon the borders of the children of Manasseh, Bethshean and its dependencies, Taanach and its dependencies, Megiddo and its dependencies, Dor and its dependencies. In these dwelt the children of Joseph the son of Israel."

Comments on the Greek: For Θαλμη, A reads Θααναχ. A has Μαγεδδω. For *υἱοῦ* A* reads *υἱοὶ*. For Βαλαδ A reads Βαλααδ, which evidently corresponds to Βαλααμ of Judg. 1:27 (A), and like it is a corrupt rendering of יבלעם. The initial iota of Ἰεβλαάμ was perhaps dropped through the influence of the final iota of *καὶ* preceding the name. (But cp. בִּלְעָם of 1 Chron. 6:55). The form Βαλααδ (with δ) may be due to the common confusion in Greek uncial writing of Δ and M. The fact that the name occurs in some of the Greek texts[1], though lacking in the Hebrew, is probably to be accounted for by the tendency of the Greek translators (or editors) to use their own judgment in revising and interpreting the text before them (Cp. Δωρ in the Greek of Judg. 1:31, and *ἥ ἐστιν* Σκυθῶν *πόλις* of Judg. 1:27). Here Jibleam seems to have been introduced from the parallel passages in Josh. 17:11 and Judg. 1:27, more probably the latter[2].

As has been suggested above[3], the peculiar phrase שְׁלֹשֶׁת הַנָּפֶת in Josh. 17:11 was in all probability originally a marginal gloss, שלשתה נפת, that later found its way into the text, meant to point out that *the third town in the list* (שְׁלִשְׁתָּהּ = "third of it") was to be read with prefixed נָפַת; i. e., נָפַת דֹּאר. This was evidently a variant reading, whether the original and correct one or intended merely to distinguish this דֹּאר from other Dor's, for example, from עֵין דֹּר in the same verse. By a very natural mistake, the two words of the gloss were wrongly divided, the ה being taken for the article and therefore joined to the following. The gloss was then inserted at the end of the verse, no other place being obviously suitable for it. הנפת could not of course be read as הַנָּפַת, since נָפַת could only be *the construct state* of a noun נָפָה, from the root נוּף. The word was therefore not unnaturally read as a segholate, הַנָּֽפֶת[1], as though from a root נפת. (To read הַנָּפֹת, as some modern commentators have suggested, is only to make a bad matter worse. The phrase would be grammatically objectionable, שׁלשׁת with a *feminine* noun, and the troublesome article; moreover, it has no possible meaning in the present context.) This explanation seems to be the only one that will in any satisfactory manner really explain the phrase that has proved such a stumbling block to all commentators[2].

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[1] Lagarde's Edition omits Βαλαδ but follows the order of B. Instead of Μανασσὴ, it reads Μωυσῆς. Holmes-Parsons omits Βαλααδ in the text (based on ΚΕΦ) but records it as appearing in several texts.

[2] The order of towns (except Dor) follows that of Judg. 1:27, and the form Βαλααδ is, as explained above, equivalent to Βαλααμ of that verse.

[3] Pages 26 f.

In שְׁלִישִׁתָה of Ezekiel 21:19 (Heb.) we have a case almost exactly parallel to the one under discussion. The true significance of the form שְׁלִישִׁתָה has also in this instance escaped the commentators. The verse, now corrupt, reads as follows:

(19) וְאַתָּה בֶן־אָדָם הִנָּבֵא וְהַךְ כַּף אֶל־כָּף וְתִכָּפֵל חֶרֶב שְׁלִישִׁתָה
חֶרֶב חֲלָלִים הִיא חֶרֶב חָלָל הַגָּדוֹל הַחֹדֶרֶת לָהֶם

Apparently, a marginal note, שְׁלִישִׁתָה חֶרֶב חֲלָלִים, supplied a variant reading for חֶרֶב חָלָל (which is the *third* time the word חֶרֶב appears in the verse). That is, the form of the verse which the glossator wished to preserve was the following: ותכפל חרב חרב חללים היא חרב חללים הגדול וגו׳. Observe that this reading (with חֲלָלִים instead of חָלָל) is supported by the Old Greek (*τραυματιῶν*) and by the Peshitto (ܩܛܝ̈ܠܐ), which accordingly corroborate our proposed explanation of the difficult שְׁלִישִׁתָה.—For the rest, the verse is obscure; in fact this very obscurity may have led to the writing of the marginal gloss that later, by its insertion into the text, greatly added to the difficulties. But whatever may be the correct reading of the rest of the passage, the explanation given for שְׁלִישִׁתָה is apparently the only one that will really account for its presence in the verse.

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[1] The ָ in נָֽפֶת is lengthened in pause.

[2] The Greek, with its *τὸ τρίτον τῆς Ναφεθά*, has mistaken the phrase as a town name, and is of no assistance in determining the true meaning of the expression.

That the above interpretation of the occurrence of שְׁלֹשֶׁת הַנָּפֶת in Josh. 17:11 is correct is rendered still more sure by the study of a similarly obscure phrase in Isaiah 65:7. Here at the end of the verse we read: וּמַדֹּתִי פְּעֻלָּתָם רִאשֹׁנָה עֶל חֵיקָם. The concluding phrase of the preceding verse (65:6) reads: וְשִׁלַּמְתִּי עַל חֵיקָם. In some manuscripts there must have been variation in, or doubt about, the reading of the preposition. (The form עֶל of our M.T. is obviously a combination of the two readings אֶל and עַל). Consequently, some scribe seems to have placed in the margin opposite verse 7 a note calling attention to the fact that the undoubted reading of verse 6, the "first" (רִאשֹׁנָה) occurrence of the phrase, was עַל חֵיקָם. When this gloss, viz. רִאשֹׁנָה עַל, was transferred from the margin into the text, the vowel of the אֶל which already stood there was carefully preserved.

In each of the three cases discussed above (i. e., Josh. 17:11, Ezek. 21:19 and Is. 65:7), the recognition of the gloss "first time" or "third time" solves a riddle which has seemed insoluble. Cases of the insertion of the similar gloss "second time" (שׁנית) are already well known; see for example the commentators on Ezekiel 4:6.

A comparison of the Hebrew of Josh. 17:11 and Judg. 1:27 reveals the fact that the former has one name (viz. עֵין דֹּר) more than the latter. Nor does Endor appear in 1 Chron. 7:29. In the Peshitto of Josh. 17:11, Endor has actually displaced Dor. Together with Jibleam it is omitted in the Greek (A) of the verse in Joshua[1]. Inasmuch as Endor lies considerably north of the rest of this line of border towns, and the textual evidence for it is so poor, it probably has no place at all in this list. It would seem that in some early manuscript Dor was written defectively. This led to the conjecture that Endor was meant, which thus crept into the text as an additional name. Some later reader decided, and rightly, that Naphath Dor was meant; his conjecture is preserved in שְׁלֹשֶׁת הַנָּפֶת at the close of the verse. In view of the probabilities, and of the evidence against its originality, we must reject עֵין דֹּר from Josh. 17:11.

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[1] It is barely possible that *'Eδωρ* of B$^{a\ b\ mg}$ may represent the name.—The B-text also omits Taanach. These omissions in the Greek are probably accidental.

Of the three passages cited (i.e. Josh. 17:11-13; Judg. 1:27, 28 and 1 Chron. 7:29) the one in Judges is in all probability the oldest and most historical. Apparently the notice in Joshua has been borrowed from that in Judges and has been modified to some extent. To fit the later theory of the tribal domains, the Joshua passage introduces the "correction:" בְּיִשָּׂשכָר וּבְאָשֵׁר. Just what this theory in regard to the settlements of the tribes was, it is impossible for us, in view of the confused and conflicting statements regarding it, to determine. That Judg. 1:27, 28 is the older and better account is further indicated by the fact that it bluntly states that Manasseh did not drive out the inhabitants of these cities (which, according to 2:1b-5a, they could have done had they obeyed Jahweh's commands), while Josh. 17:12 softens this down and lessens their guilt by declaring the children of Manasseh were *not able* to dispossess them. In the retention in Josh. 17:11 of the accusative וְאֶת־יֹשְׁבֵי and of וְיֹשְׁבֵי from Judg. 1:27 (where they fit into the construction as they do not at all in the Joshua passage) there is added evidence for the dependence of Josh. 17:11-13 on Judg. 1:27, 28.

The list of boundaries of Manasseh in 1 Chron. 7:29 agrees in content but not in form with Josh. 17:11[1]. It would appear that the Chronicler has rearranged the names he found in the other two passages, so that the order followed by him is the correct geographical one, with Dor last. To change (with Moore and Budde) the arrangement of the towns in Josh. 17:11, Judg. 1:27, so as to follow the geographical order is hardly justifiable. Both passages place Dor third in the list, and the gloss שׁלֹשׁתה נפת corroborates this order. The Taanach......Jibleam order of Judg. 1:27 may have been corrected by the one who borrowed the verse in Josh. 17:11. Dor's position in both passages may be due to a doubt as to which Dor was meant (cp. Endor in Josh. 17:11)[2]. It would appear that the account in Judges belongs to the J. strand of narrative, and that Josh. 17:11 is borrowed from this account.

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[1] As explained above, Jibleam is not given by the Chronicler (Hebrew) though it is represented in the Greek by Βαλα(α)δ.

[2] Ancient lists of towns are often in very irregular order. See on Judith 2:28 below, p. 55.

The cities mentioned in these passages form a line stretching from Bethshean on the east to Dor on the west. Bethshean (mod. Beisān) is situated at the eastern end of the Great Plain. Jibleam has been identified with the modern Bel'ameh, south of Ǵenīn[1], others place it northwest of Bethshean, the modern Yebla[2]. Taanach (mod. Ta'annuk) lies west of Bethshean and northwest of Bel'ameh. Megiddo is northwest of Taanach, at the modern Leǵǵūn. This chain of fortified cities separated the tribes of Joseph from their brethren struggling for a foothold in Galilee to the north.

וַיּוֹאֶל in Josh. 17:12, Judg. 1:27 contains the idea of determination, and the clause may be translated "persisted in dwelling (or remaining)"[3]. The Hebrew text of Judg. 1:27 is quite irregular in its use or omission of ישְׁבֵי and בְּנוֹתֶיהָ. The reference in Josh. 17:13; Judg. 1:28, to the time when Israel become strong (חזק[ו]) is probably to the times of David. We have no satisfactory proof that the city of Dor ever came into his power, although in 1 Kings 4:11 the whole region of Naphath Dor is assigned to Ben-Abinadab, Solomon's son-in-law[4]. מַס refers to the working gangs.

Thus, according to the accounts of Josh. 17:11-13; Judg. 1:27, 28 and 1 Chron. 7:29, Dor is one of the border cities of Manasseh, whose Canaanite inhabitants maintained possession of their cities at the time of the Hebrew invasion. Later, it is claimed, these inhabitants were put to task-work by their Hebrew conquerors. It may be doubted whether the Hebrews ever secured more than a brief suzerainty (if even that) over the people of remote Dor. The frank statement that "they by no means expelled them" indicates that the town remained Canaanite. As for Dor, it was far away in Philistine or Phoenician rather than in Hebrew territory, and therefore in a position to maintain its freedom.

JUDGES 1:31.

The Greek of Judges 1:31 includes Dor among the cities assigned to Asher which remained unconquered. The verse reads (A-text):

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[1] Moore, Budde.

[2] G.A.S., *Hist. Geog.*, Maps I, VI.

[3] B.D.B. s.v. יאל; Moore on the passage.

[4] See below.

(13) καὶ Ἀσὴρ οὐκ ἐξῆρεν τοὺς κατοικοῦντας Ἀκχώ, καὶ ἐγένετο αὐτῷ εἰς φόρον, καὶ τοὺς κατοικοῦντας Δὼρ καὶ τοὺς κατοικοῦντας Σιδῶνα καὶ τοὺς κατοικοῦντας Δαλὰφ καὶ τὸν Ἀσχενδεὶ και τὴν Σχεδιὰν καὶ τὴν Ἀφὲκ καὶ τὴν Ῥοώβ.

In the Massoretic text Dor does not appear. None of the versions except the Greek seem to have it[1]. The textual evidence for the genuineness of the citation of Dor in this place is, therefore, very poor. In all probability the name is an insertion into the Greek based on the passage in Josh. 17:11, where Dor is mentioned among the enclaves of Manasseh in Issachar and Asher[2]. Both Moore and Budde comment on the absence in the Hebrew of Tyre, which lies between Accho and Sidon; this is the very position occupied by Dor in the passage. It is, of course, barely possible that there was present in the original Hebrew the name צוֹר; but of this we have no proof. In view of the faulty character of the Greek text of Judges and of the evidence of free redaction in it, we must consider it probable that the inclusion of Dor in the Greek of 1:31 is the word of an editor's hand. In any case it adds nothing to the information contained in the passages already discussed.

1 KINGS 4:11.

1 Kings 4:7-19 contains a list of twelve victualling officers of Solomon, placed over "all Israel." Fourth in this list appears (verse 11) the name of Ben-Abinadab, in charge of "all Naphath Dor:"

(11) בֶּן־אֲבִינָדָב כָּל־נָפַת דֹּאר טָפַת בַּת־שְׁלֹמֹה הָיְתָה לוֹ לְאִשָּׁה

Translation: "Ben-Abinadab, all the Height of Dor; (Taphath, the daughter of Solomon, was his wife.)"

The Greek reads (A)[3]:

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[1] Walton's *Polyglot*.

[2] The verse Josh. 17:11 is based, as indicated above, on Judg. 1:27, which also names Dor and precedes the passage now under discussion by only three verses. Probably these verses are all connected with one another, at least in the mind of the Greek translator.

[3] The text of B in this verse is hopelessly confused and corrupt; it is another illustration to prove how poor is the document Swete chose as his basic text.

(11) *υἱοῦ ᾿Αβιναδὰβ πᾶσα Νεφαδδώρ, Ταφατὰ θυγάτηρ Σαλωμὼν ἦν αὐτῷ εἰς γυναῖκα* (ΒΚΕΦ add *εἷς*).

Whether בֶּן־אֲבִינָדָב and the other names in this list compounded with Ben are surnames like Ben-Hadad[1] in 1 Kings 20, or whether the proper names originally preceded Ben and were later accidentally dropped, is uncertain. In the Greek, *υἱοῦ* should become *υἱός*. The *εἷς* which appears at the end in many good manuscripts may point to an original אֶחָד as in Josh. 12:9 ff.

The mention of sons-in-law of Solomon in this section points to a period somewhat advanced in his reign. However, considering the evident fact that the whole tendency of 1 Kings 3-11 is to magnify Solomon and his reign, we may well doubt the historicity of these reputed divisions of his kingdom. Again, as has already been said, it can hardly be put down as certain that Solomon's realm really included the remote district of Dor, located as it is in debatable territory lying between Philistia and Phoenicia. It is, however, true that Biblical tradition is consistent in ascribing to Solomon a greater extent of territory than was held by any other Hebrew ruler. If ever the "height of Dor" belonged to Israel, it was at that time. The passage does not seem to be from the oldest strand of the narrative of the Books of Kings; very likely it was from some other historical work editorially included in the book[2].

JUDITH 2:28.

In the book of Judith, following the account of Holofernes' punitive ravages in the plain of Damascus, the terror inspired by him in the coast cities is described as follows (Judith 2:28 (18), A Text):

καὶ ἔπεσεν ὁ φόβος καὶ ὁ τρόμος αὐτοῦ ἐπὶ τοὺς κατοικοῦντας τὴν παραλίαν, τοὺς ὄντας ἐν Σιδῶνι καὶ ἐν Τύρῳ, καὶ τοὺς κατοικοῦντας Σοὺρ καὶ ᾿Οκεινά, καὶ πάντας τοὺς κατοικοῦντας ᾿Ιεμνάαν, καὶ οἱ κατοικοῦντες ἐν ᾿Αζώτῳ καὶ ᾿Ασκάλωνι ἐφοβήθησαν αὐτὸν σφόδρα.

(28) "And the fear and dread of him fell upon them that dwelt on the sea coast, upon them that were in Sidon and in Tyre, and

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[1] Gray (*Prop. Names*, pp. 73 f.) explains the form of these names on the theory that, like Ben-Hadad, some or all of these officers were foreigners.

[2] So Stade in *S.B.O.T.*

upon them that dwelt in Dor and Accho, and upon all that dwelt in Jamnia; and they that dwelt in Azotus and Ascalon feared him exceedingly."

After Ἀσκάλωνι, א· H.-P. X, 58. Syr. Old Lat., read καὶ Γάζῃ. It is quite possible that Gaza stood in the original text. For Ὀκεινά, א^ca and H.-P. 19, 108 read Κιναιους. But the town-name better fits the context. Ὀκεινά is, as most commentators agree, Accho (= Ptolemais), a haven north of Carmel.

For the third town in the list, the B-text reads Ἀσσούρ, of which Ἀσ is merely the repetition of the final letters of the preceding κατοικοῦντας. The reading of א*, Τουρ, is perhaps influenced by the preceding Τύρῳ. The Syriac with ܣܘܪ evidently renders a Greek name written with σ. Löhr (in Kautzsch's *Apokryphen*), following Ball (in *Wace's Apocrypha*) and Ewald[1], interprets the form as an accidental repetition of the foregoing Τυρῳ, (=Çor.). Fritzsche rightly rejects Ewald's suggestion as being quite improbable, and fixes instead upon דור as the city here referred to. He argues that the locality speaks strongly for his interpretation; and that Dor and Accho are so close to one another that the fact that the names have exchanged places in the list is quite without significance. It should be remarked in this connection that ancient writers, even in strictly geographical treatises, are by no means careful to preserve the correct geographical order in their lists of cities[2]. It is, besides, open to question whether the writer of the book knew much about the relative positions of the northern coast cities; he might easily have made the mistake through ignorance. Even if the original order of towns in this verse was the correct one, the later faulty writing of the name of Dor as Σουρ and of Ἀκκο as Ὀκεινα would have caused confusion; perhaps this led to the transposition of Dor to its present position after Tyre[3]. As far as the form Σουρ is concerned, it would appear that in some cursive manuscript δ was written so much like σ that δωρ was read as σωρ. Inasmuch as the confusion of ω and ου is a very common phenomenon, the variation between Σουρ and Δωρ is easily explained.

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[1] *Gesch. des V. Israels*, III, 2, p. 544.

[2] Cp. the varying order of cities in Josh. 17:11 and Judg. 1:27 above; see also *Bibl. Geog. Arab.* VII, p. 327, line 7 (Jubail, Ṣaidā, Beirūt); p. 329, 2 ff. (Caesarea, Jamnia, Jaffa): 2R53, No. 4, lines 55–58 (discussed below), gives the order: Samaria, Damascus, Dor, Megiddo.

[3] It is not at all impossible that the transposition took place under the impression that Σουρ was actually a doublet to Τυρῳ.

The date of the composition of Judith is generally placed in the second century B. C. It is a romance with its setting in the times of Nebuchadrezzar. As such it has little or no historical value. The principal value of this notice consists, therefore, in its indication that in the second century B. C. the writer recognized in Dor one of the coast towns important enough to merit enumeration in a list of the larger cities of the region.

THE ESHMUNAZAR INSCRIPTION AND DOR.

The Eshmunazar inscription (Lines 18-20) states that the "Lord of Kings", in return for assistance rendered, presented Dor and Joppa to King Eshmunazar II of Sidon as a perpetual possession. The text of the inscription reads:[1]

18. ועד · יתן · לן · אדן · מלכם ·
19. אית · דאר · ויפי · ארצת · דגן · האדרת · אש · בשר · שרן ·
למדת · עצמת · אש · פעלת · ויספננם
20. עלת · גבל · ארץ · לכננם · לצדנם · לעלם ·

18. "Furthermore, the Lord of Kings gave to us Dor and Joppa[2], the glorious lands of Dagon which are in the field of Sharon, in recognition of the assistance which I rendered; and we joined them to the territory of the land, to belong to the Sidonians forever."

The date of this inscription is variously stated as the fourth or the third century B.C., i.e., either in the Persian or in the early Greek period. The argument for the date has usually depended on the interpretation of the expression "Lord of Kings" (אדן מלכם). It is urged[3] that this is a Ptolemaic title and that the inscription must therefore be dated about the middle of the third century B.C. Schlottman[4] on the other hand refers to the Persian custom of rewarding with gifts of cities those rulers who had served Persian interests in some special manner. He therefore dates the inscription in the period of Persian prosperity, perhaps during the time of the wars with Greece. Schürer[5], on the basis of Scylax' *Δῶρος πόλις Σιδονίων*[6], decides that the inscription must certainly be placed in the Persian period. His contention is that the transfer of Dor to

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[1] *C.I.S.* I, 3; Lidzbarski, Taf. IV:2.

[2] Hilprecht (*Explorations in Bible Lands*, pp. 615 ff.) makes the incorrect statement that "Eshmunazar extended the boundaries of Sidon by the conquest (sic !) of Dor and Joppa."

[3] E. Meyer in *Enc. Bib.*, 3762 f., s.v. Phoenicia; Cooke, *North Semitic Inscriptions*, p. 40.

[4] *Die Inschrift Eschmunazars*, pp. 48 ff.

[5] *G.J.V.* II, 129.

[6] *Geographi graeci minores*, ed. Müller, I, 79.

Sidon which Scylax' statement presupposes is the one referred to here by Eshmunazar. Inasmuch as Scylax lived about 350 B.C.[1], Eshmunazar must be dated in the period of Persia's supremacy. This argument of Schürer seems to have considerable weight. The counter-argument based on the usage of "King of Kings" by the Persians instead of "Lord of Kings" is not decisive. The latter title was used of Alexander[2] and others, and may well have been applied to the Persian overlord.

The excavation of the temple of Eshmūn at Sidon possibly throws some light on the question of the date of Eshmunazar II. According to the report of Macridy-Bey[3], a first temple was destroyed and another built in its place. This second temple was in its turn demolished, not later than the latter half of the third century B.C. The date of the building of the second temple Macridy-Bey, on the basis of fragments of architecture found there, places in the latter half of the fourth century B.C. The destruction of the *first* temple he therefore dates about the middle of the same (i.e., the fourth) century. It must therefore have been built at least as early as the first half of the fourth century B.C. More convincing still is the discovery, amongst the debris from the first temple found under the pavement of the reconstructed temple, of a votive inscription in basalt upon which were engraved several lines in hieroglyphic script giving the name of Ak'horis, an Egyptian King of the 29th dynasty (393-381 B.C.) This would bring the probable date of the first temple back to the 5th century. Now the inscriptions of King Bod-ashtart were found imbedded in the core of the north wall of the reconstructed temple[4]. They were so placed in the inside of the wall that they could neither be seen nor read, and evidently consisted of stones from the old temple used in rebuilding the later one. These inscriptions, therefore, probably belonged to the first temple and are to be dated not later than the early fourth century B.C. Inasmuch as Bod-ashtart belongs to the same generation as Eshmunazar II (both being grandsons of Eshmunazar I), Eshmunazar II should probably likewise be connected with the first temple, and his inscription dated in the early fourth century. When this evidence is taken in connection with the testimony of Scylax (discussed above) we have fairly strong presumptive evidence that Eshmunazar (and the inscription) antedates the Greek period and should be dated during the period of Persian domination. This tentative conclusion does not, of course, exclude the possibility that further discoveries in Syria may cause us to decide in favor of another date for this inscription.

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[1] Schürer, *l.c.*; Gutschmid, *Kleine Schriften*, II, 77.

[2] E.g., in the Umm-el-'Awamid inscription (*C.I.S.* I, 7; Cooke, p. 44).

[3] *Le Temple d'Echmoun à Sidon* (Fouilles du Musée Impérial Ottoman), pp. 13 ff.

[4] *Ibid.*, pp. 32-34.

דּגן in line 19 has been variously translated as "corn" and as the god "Dagon." We know that Dagon was worshipped among the Philistines[1]. Joppa lies well toward Philistia, and Dor, as indicated above, was settled by the Takkara related to the Philistines. There is, therefore, every possibility that at this time Dagon[2] was also the god of Joppa and Dor, and that the inscription means to indicate that these regions were within the realms of that god.

The use of the adjective אדרת may give some slight indication that דּגן is to be interpreted as the name of the god. In both Hebrew and Phoenician, אַדִּיר has the meaning "majestic", "glorious"[3], and is very frequently used as an epithet of divine beings (e. g. in *C.I.S.* 118, and in the cry of the Philistines in 1 Sam. 4:8). Compare also such common Phoenician names as אדרבעל. In line 16 of this same (i. e. Eshmunazar) inscription the word is used in the phrase שמם אדרם ("Glorious Heavens"), which apparently designated the hilly district where the temples of the gods were built[4]. Cooke (*North Semitic Inscriptions*, p. 38) says of the adjective here: "The idea of expanse is contained in the root; so אדר is suitably applied to the wide corn-lands of שרן". It seems much more probable that the choice of the adjective is due to the presence of the divine name, Dagon. This agrees with the usual connotation of אַדִּיר. The use of this particular adjective here is, of course, very precarious evidence for the worship of Dagon in Dor at the time of the Eshmunazar dynasty; and yet its possible value must be admitted[1].

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[1] Moore in *Enc. Bib.*, p. 983; Paton in Hast. *Enc. of Rel. and Ethics*, s.v.; Schrader in Riehm's *Handwörterbuch*.

[2] It seems most probable that Dagon is related to the Babylonian god Dagān (so Moore, Paton, Schrader, E. Meyer in *Enc. Bib.*, s.v. Phoenicia). It would appear that this god was found in the land by its Philistine, etc. conquerors and adopted by them. The name Dagon is probably connected with דָּגָן (=corn), for he seems to have been both in Babylonia and Canaan a god of agriculture. On a seal he has the emblem of an ear of corn (Paton, *l.c.*). On the other hand it is still possible that the name comes from דָּג, "fish" (so Schrader, *l. c.*; Meyer, *Gaza*, pp. 115 ff.).

[3] B.D.B., s.v.; Siegfried und Stade, s.v.; so also in New Hebrew, cp. Jastrow, *Dict. of Targ.*, s.v.

[4] Torrey in *J.A.O.S.*, vol. 23 (1902), p. 163; vol. 24 (1903), pp. 214 ff.

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[1] Neubauer (*Géog. Talm.*, p. 13) translates: "pays du Dagon *adoré*" with the note: "La racine אדר se trouve plusieurs fois dans cette même inscription avec le sens 'adorer'." While he has correctly perceived that the adjective has probably been chosen with reference to the mention of the god, he has no sufficient warrant, either in this inscription or elsewhere, for translating it "adoré." The grammatical form forbids this and requires that האדרת be read with ארצת.

EARLY GREEK WRITERS.

HECATAEUS.

That Dor was not unknown to the Greeks in early times is evidenced by the citation from Hecataeus of Miletus in Stephan of Byzantium[1]. Hecataeus, who lived c. 500 B. C., is quoted as follows (from his *περιήγησις*): Ἑκαταῖος Ἀσίᾳ· "*μετὰ δὲ ἡ πάλαι Δῶρος, νῦν δὲ Δῶρα καλεῖται.*"

"'Hecataeus in (section on) Asia: 'And next comes ancient Doros, now, however, called Dora'."

But the change from Doros to Dora occurred long after the time of Hecataeus[2]. It seems, therefore, that the version of Hecataeus used by Stephan of Byzantium had been added to by interpolation. We have no reason to doubt, however, that Hecataeus knew and mentioned Dor.

CRATERUS.

It has been argued by some[3] that Dor was for a time tributary to the Athenians during the period of Athen's hegemony in the Mediterranean (fifth century B. C.). This claim is based on the assumption that Dor in Caria mentioned by Stephan of Byzantium[4] is really the Phoenician Dor. The passage from Stephan reads as follows:

ἔστι καὶ Καρίας Δῶρος πόλις, ἣν συγκαταλέγει ταῖς πόλεσιν ταῖς Καρικαῖς Κρατερὸς ἐν τῷ περὶ ψηφισμάτων τρίτῳ "Καρικὸς φόρος Δῶρος, Φασηλῖται."

"There is also a city of Caria named Dōros, which Craterus[5] in the third book of his treatise 'Concerning Decrees' records among the Carian cities (as follows): 'Carian tribute: Doros, the Phaselians'."

Phaselis, the city named with Dor as on the Carian tribute-list, was situated on the Lycian-Pamphylian border. These provinces are far from our Dor, and it would require much more conclusive evidence than has yet been brought forward to establish a probability that we are to look south of Mt. Carmel for the city named by Craterus[1]. It may be that settlements of Greek Dorians in Caria led Craterus to speak of a city Doros that had no real existence. It is far more probable, however, that the Dorians actually had in Caria a city Doros, since the name is not uncommon. It seems best, therefore, to reject the assumption that Phoenician Dor is intended in the passage under discussion.

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[1] *Steph. Byz.* s.v. Δῶρος; Müller, *Fragm. hist. graec.*, I, 17, n. 260.

[2] See chapter on the name Dor; Schür., *G.J.V.*, II, pp. 138 f.

[3] See Cooke, *Enc. Bib.*, s.v. Dor; Schür., *G.J.V.*, II, pp. 138 ff.

[4] S.v. Δῶρος.

[5] Greek historian of the third cent. B. C. (Smith, *Dict. of Gr. and Rom. Biog.*, s.v.)

APOLLODORUS.

Apollodorus, an Athenian grammarian who lived c. 140 B.C.[2], is quoted by Stephanus Byzantinus[3] as follows:

Ἀπολλόδωρος δὲ Δῶρον καλεῖ ἐν Χρονικῶν δ' "εἰς Δῶρον οὖσαν ἐπιθαλάττιον πόλιν."

"And Apollodorus mentions Dor in the fourth (book of his) Chronica: 'To Dor which is a maritime city.'"

ARTEMIDORUS OF EPHESUS.

From Artemidorus of Ephesus, a geographer who wrote c.103 B.C., we have a fragment in which Dor is mentioned in connection with Strato's Tower (later Caesarea) and Mt. Carmel. The passage reads[4]:

καὶ Ἀρτεμίδωρος Δῶρα τὴν πόλιν οἶδεν ἐν Ἐπιτομῇ τῶν ιά "Συνεχῶς δ' ἐστὶ Στράτωνος πύργος, εἶτα ἔνι Δῶρα ἐπὶ χερσονησοειδοῦς τόπον κείμενον πολισμάτιον, ἀρχομένου τοῦ ὄρους τοῦ Καρμήλου." καὶ ἐν θ' γεωγραφουμένων τὸ αὐτό.

"And Artemidorus is acquainted with the city Dor in his Epitome book 11: 'And adjacent is Strato's Tower, then comes

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[1] Köhler, *Urkunden u. Untersuch. zur Gesch. des delischattischen Bundes* (Abhandlungen der Berliner Akad., 1869), p. 207, cites from another Athenian tribute-list Κελένδερις (on the Cilician coast opposite Cyprus) to prove that Athenian influence reached far towards Syria. But this city is too remote from the Phoenician Dor to establish his contention.

[2] *Enc. Brit.* s.v. Apollodorus.

[3] Ed. Meineke, s.v. Δῶρος.

[4] *Steph. Byz.*, l.c.; C. Müller, *Geog. Graec. min.*, I, 576, Fragm. 18 (from Marcian of Heraclea).

Dora, a small town situated upon a peninsula, near the beginning of Mt. Carmel.' And in the ninth book of the Geography the same."

ALEXANDER EPHESIUS.

In his geographical poem, Alexander Ephesius[1], a contemporary of Cicero (106-43 B.C.), joins Joppa and Dor in one of his lines. Stephanus Byzantinus[2] cites as follows:

καὶ 'Αλέξανδρος ἐν 'Ασίᾳ "Δῶρος τ'ἀγχίαλός τ' 'Ιόπη προύχουσα θαλάσσης."

"And Alexander in the section, 'Asia'[3]: 'Both Dor bordering on the water and Joppa jutting forth into the sea.' "

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[1] Called Λύχνος; Knaack in Pauly-Wissowas *Enc.* s.v. Alexander Ephesius, n. 86.

[2] Quoted in Meineke, *Analecta Alexandrina*, p. 374.

[3] The geographical poem was divided into three parts, 'Ευρώπη, '*Ασία* and Λιβύη.

HISTORY OF DOR DURING THE GREEK, MACCABEAN AND ROMAN PERIODS.

POLYBIUS, HISTORIAE 5:66.

In the course of his early campaigns against Ptolemy Philopator of Egypt, Antiochus III ("the Great") besieged Dor without result. The strength of the place and the reënforcements sent by Nicolaus, together with the approach of winter, made him abandon his attempt. This was in the year 219 B.C. Polybius thus records the incident[1]:

Ἀντίοχος δὲ συνεσταμένος πολιορκίαν περὶ τὴν καλουμένην πόλιν Δοῦρα[2], καὶ περαίνειν οὐδὲν δυνάμενος διά τε τὴν ὀχυρότητα τοῦ τόπου καὶ τὰς τῶν περὶ τὸν Νικόλαον παραβοηθείας, συνάπτοντος ἤδη τοῦ χειμῶνος, συνεχώρησε ταῖς παρὰ τοῦ Πτολεμαίου πρεσβείαις ἀνοχάς τε ποιήσασθαι τετραμήνους καὶ τῶν ὅλων εἰς πάντα συγκαταβήσεσθαι τὰ φιλάνθρωπα. . . . ταῦτα δ' ἔπραττε, πλεῖστον μὲν ἀπέχων τῆς ἀληθείας· σπεύδων δὲ μὴ πολὺν χρόνον ἀποσπᾶσθαι τῶν οἰκείων τόπων, ἀλλ' ἐν τῇ Σελευκείᾳ ποιήσασθαι τὴν τῶν δυνάμεων παραχειμασίαν.

"But Antiochus had begun a siege against the city named Dor, and could accomplish nothing because of the strength of the place and because of the reënforcements they received from Nicolaus[3]. Since winter was already drawing near he agreed with the ambassadors of Ptolemy (Philopator) to observe an armistice of four months duration and to enter into friendly relations in everything that concerned the war. And this he did although he was far from sincerity in the matter. He was eager, rather, not to be long separated from his own lands, but instead to pass the winter with his troops in Seleucia."

Whether Dor fell into Antiochus' hands the following year (218 B.C.) on his way to the defeat at Raphia is not recorded.

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[1] *Historiae*, 5:66, ed. Büttner-Wobst II, p. 185 f.; Reland, *Palaestina*, p. 744; cp. Noris, *Annus et Epochae Syromacedonum*, on Polyb., V:66; Schürer, II, 139.

[2] In *Δοῦρα*, *οῦ* is, as remarked above, simply the confusion of *ου* with *ω*, a common phenomenon.

[3] An Aetolian, one of Ptolemy's generals (*Polyb.* 5:61, 68, 70). Later he fights with Antiochus the Great against Arsaces (*Polyb.* 10:29).

Probably it became subject to him for a time after his victory at Paneas in the year 198 B.C.[1].

1 MACCABEES 15; ANTIQUITIES XIII, 7:2.

Dor was again besieged in 139-8 B.C., by Antiochus VII (Sidetes). Trypho, who had ruled since his assassination of Antiochus VI (Dionysus) in 142 B.C., and had by his excessive luxury and caprices alienated even his troops, had been obliged to flee before Antiochus Sidetes to Dor for refuge. The siege was raised, however, when Trypho in some way managed to escape from the city. First Maccabees 15:10-14; 25-27; 37; 39c reads[2]:

10. ἔτους τετάρτου καὶ ἑβδομηκοστοῦ καὶ ἑκατοστοῦ ἐξῆλθεν Ἀντίοχος εἰς τὴν γῆν τῶν πατέρων αὐτοῦ, καὶ συνῆλθον πρὸς αὐτὸν πᾶσαι αἱ δυνάμεις, ὥστε ὀλίγους εἶναι σὺν Τρύφωνι. 11. καὶ ἐδίωξεν αὐτὸν Ἀντίοχος ὁ βασιλεύς, καὶ ἦλθεν εἰς Δωρὰ φεύγων τὴν ἐπὶ τὴν θάλασσαν. 12. ᾔδει γὰρ ὅτι ἐπισυνῆκται ἐπ᾽ αὐτὸν κακά, καὶ ἀφῆκαν αὐτὸν αἱ δυνάμεις. 13. καὶ παρενέβαλεν Ἀντίοχος ἐπὶ Δωρά, καὶ σὺν αὐτῷ δώδεκα μυριάδες ἀνδρῶν πολεμιστῶν καὶ ὀκτακισχιλία ἵππος. 14. καὶ ἐκύκλωσεν τὴν πόλιν, καὶ τὰ πλοῖα ἀπὸ θαλάσσης συνῆψαν· καὶ συνέθλιβεν τὴν πόλιν ἀπὸ τῆς γῆς καὶ ἀπὸ τῆς θαλάσσης, καὶ οὐκ εἴασεν οὐδένα ἐκπορεύεσθαι καὶ εἰσπορεύεσθαι. 25. Ἀντίοχος δὲ ὁ βασιλεὺς παρενέβαλεν ἐπὶ Δωρὰ ἐν τῇ δευτέρᾳ, προσάγων διὰ παντὸς αὐτῇ τὰς χεῖρας καὶ μηχανὰς ποιούμενος, καὶ συνέκλεισεν τὸν Τρύφωνα τοῦ εἰσπορεύεσθαι καὶ ἐκπορεύεσθαι. 26. καὶ ἀπέστειλεν αὐτῷ Σίμων δισχιλίους ἄνδρας ἐκλεκτοὺς συμμαχῆσαι αὐτῷ καὶ ἀργύριον καὶ χρυσίον καὶ σκεύη ἱκανά. 27. καὶ οὐκ ἠβούλετο αὐτὰ δέξασθαι, ἀλλὰ ἠθέτησεν πάντα ὅσα ἐσυνέθετο αὐτῷ τὸ πρότερον, καὶ ἠλλοτριοῦτο αὐτῷ. 37. Τρύφων δὲ ἐμβὰς εἰς πλοῖον ἔφυγεν εἰς Ὀρθωσίαν. 39c. ὁ δὲ βασιλεὺς ἐδίωκε τὸν Τρύφωνα.

10. "In the one hundred and seventy fourth year (i.e. of the Seleucid era=Oct. 139 B.C.-Oct. 138 B.C.) Antiochus (Sidetes) went forth into the land of his fathers: and all the forces came together to him, so that there were (but) few men with Trypho. 11. And Antiochus the king pursued him, and he came in his flight to Dor which is by the sea. 12. For he knew that evils were gathered together against him, and that his forces had forsaken

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[1] Moss in Hast., *D.B.* I, p. 105, s.v. Antiochus III.

[2] Swete III, pp. 657-9 (A-text).------The genuineness of the closing chapters of 1 Maccabees has been questioned by Destinon, Wellhausen, and others. For convincing arguments on the other side see Torrey in *Enc. Bib.*, III, 2863-5; *Ezra Studies*, pp. 148 ff.

him. 13. And Antiochus encamped against Dor and with him were 120,000 warriors and 8000 horse[1]. 14. And he surrounded the city, and the ships joined in the attack from the sea; and he worried the city by land and sea, and allowed no one to go out or in."

(Vv. 15-24 record the return of Numenius and the embassy which Simon had sent to Rome.)

25. "But Antiochus the King encamped against Dor on the second (day)[2], continually bringing his forces up to it, and making engines of war, and he shut up Trypho so that he could neither go in nor go out. 26. And Simon sent him 2000 picked men to fight with him; and silver and gold and many implements.

27. And he would not receive them, but set at naught all the covenants he had made with him before, and was estranged from him."

(The king sends to Simon to demand a tribute of 500 silver talents, and is enraged when this is refused: vv. 28-36.)

37. "But Trypho embarked on a ship and fled to Orthosia."

(Vv. 38, 39 a b: The king commands Cendebaeus to attack the Jews.)

39c. "But the king pursued Trypho."

Josephus' account (*Ant.* XIII, 7: 2) differs in several particulars from that contained in 1 Maccabees[3].

γενόμενος δ' ἐν τῇ Σελευκείᾳ ὁ Ἀντίοχος, καὶ τῆς ἰσχύος αὐτῷ κατὰ πᾶσαν ἡμέραν αὐξανομένης ὥρμησε πολεμήσων τὸν Τρύφωνα, καὶ κρατήσας αὐτοῦ τῇ μάχῃ τῆς ἄνω Συρίας ἐξέβαλεν εἰς τὴν Φοινίκην, διώξας ἄχρι ταύτης, εἴς τε Δώραν φρούριόν τι δυσάλωτον ἐπολιόρκει συμφυγόντα. πέμπει δὲ καὶ πρὸς Σίμωνα τὸν τῶν Ἰουδαίων ἀρχιερέα περὶ φιλίας καὶ συμμαχίας πρέσβεις. ὁ δὲ προσδέχεται προθύμως αὐτοῦ τὴν ἀξίωσιν, καὶ χρήματά τε πολλὰ καὶ τροφὴν τοῖς τὴν Δώραν πολιορκοῦσι στρατιώταις, πέμψας πρὸς Ἀντίοχον, ἀφθόνως ἐχορήγησεν, ὡς τῶν ἀναγκαιοτάτων αὐτὸν πρὸς ὀλίγον καιρὸν κριθῆναι φίλων. ὁ μὲν γὰρ Τρύφων ἐκ τῆς Δώρας φυγὼν εἰς Ἀπάμειαν καὶ ληφθεὶς ἐν αὐτῇ τῇ πολιορκίᾳ διεφθάρη, βασιλεύσας ἔτη τρία.

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[1] The numbers are doubtless exaggerated.

[2] Fritzsche, I, p. 227; Kautzsch, I, p. 78; Fairweather, p. 252; Wace supplies *πολιορκίᾳ*, and translates "for the second time," or "in the second siege." It is better to consider this a redactional resumption of the narrative of the siege described in vv. 13, 14, which had been interrupted by the account of the return of the embassy in vv. 15-24.

[3] Text from ed. Naber. . . . The parallel passage in *B.J.*, I, 2:2 is much briefer, mentioning simply Simon's assistance during Antiochus' siege of Dor, and Antiochus' ingratitude afterward. Its source is the same as that of the passage in *Ant.*

"As Antiochus was now come to Seleucia, and his forces increased every day, he marched to fight Trypho; and having beaten him in the battle, he ejected him out of Upper Syria into Phenicia, and pursued him thither, and besieged him in Dora, which was a fortress hard to be taken, whither he had fled. He also sent ambassadors to Simon the Jewish high priest, about a league of friendship and mutual assistance: who readily accepted the invitation, and sent to Antiochus great sums of money and provisions, for those that besieged Dora, and thereby supplied them very plentifully, so that for a little while he was looked upon as one of his most intimate friends: but Trypho fled from Dora to Apamea, where he was taken during the siege, and put to death, when he had reigned three years[1]."

(In the following section Josephus relates that afterward Antiochus forgot the assistance Simon had rendered, and sent Cendebeus to ravage Judea and seize Simon. Simon was able, however, to defeat the forces sent against him.)

According to Josephus, then, the armies of Trypho and Antiochus Sidetes first fought a pitched battle in Upper Syria in which Antiochus was victorious. Trypho then fled to Dor and was besieged there. Contrary to the representation in 1 Maccabees (where Sidetes refuses to accept Simon's voluntarily proffered gifts and assistance), Josephus relates that the Syrian king requested and gladly received from Simon both money and provisions. Instead of following 1 Maccabees in making Orthosia Trypho's destination, Josephus names Apamea. He also adds the statement that at Apamea Trypho was taken in a siege and put to death. Still another statement of Trypho's destination is given by Charax[2], who says he fled to "Ptolemais, called Ake;" as follows:

καὶ Χάραξ ιά "Τρύφων ἐν Δώρῳ τῆς κοίλης Συρίας πόλει πολιορκούμενος ὑπ' Ἀντιόχου ἔφυγεν εἰς Πτολεμαΐδα τὴν Ἄκην λεγομένην."

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[1] Following in general Margoliouth's revision of Whiston's translation.

[2] *Steph. Byz.* (ed. Meineke, p. 254), s.v. Δῶρος; also in Müller, *Frag. hist. graec.* III, 644 n. 40. Cp. Fritzsche, I, 229. Charax probably lived during the reign of Hadrian and the Antonines.

"And Charax (in book) 11, 'Trypho, being besieged in Dor, a city of Coele-Syria by Antiochus, fled to Ptolemais, called Ake.'"

The attempt to harmonize these variant accounts by making Trypho go first to Ptolemais, then to Orthosia and finally to Apamea[1], is neither reasonable nor convincing. Evidently there were in existence several differing and conflicting accounts of what became of Trypho. Schürer[2] holds that Josephus used 1 Maccabees as his main source here, but that he freely changed some of the details from some Greek writer, probably Polybius. Hölscher[3] classes this passage with the other "Syriaca" and assigns them all to Strabo, who, he alleges, in turn found his material in Polybius and Posidonius. Destinon[4] believes that Josephus' source for this passage was a writer who had already composed a narrative out of 1 Maccabees and some Greek writer. Inasmuch as the closing chapters of 1 Maccabees as they now stand seem to be original[5], it is probable that Josephus worked over the material contained in them with the aid of material from some Greek historian. In any case, whatever the process of fusion and relation of documents in these passages may have been, it is the clear testimony of our sources that Trypho was actually besieged in Dor by Antiochus Sidetes and that he somehow escaped from that city.

ANTIQUITIES XIII, 12:2, 4.

Soon after the beginning of the reign of Alexander Jannaeus (104-78 B.C.), Dor is mentioned by Josephus in connection with Alexander's plan of bringing the coast cities under his sway. Dor and Strato's Tower (Caesarea) were held at this time by a tyrant named Zoilus[6]. When Alexander started his campaign by besieging Ptolemais, Zoilus assisted that city. Forced by the weakness of the rival Syrian kings (Antiochus VIII [Philometer][1], and Antiochus Cyzicenus) to look abroad for further assistance, the inhabitants of Ptolemais sent to Ptolemy Lathyrus, who had shortly before fled from Cleopatra, his mother, from Egypt to Cyprus. The ambassadors from Ptolemais promised the Egyptian that Zoilus would unite with them in loyalty to him (Jos., *Ant.* XIII, 12 : 2).

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[1] Fritzsche, I, 229; Wace, II, 527; Schürer, *G.J.V.* I, 253.

[2] Hauck-Herzog, *Enzyk.*, s.v. Josephus.

[3] *Die Quellen des Josephus.*

[4] Margoliouth (*Revision of Whiston's Josephus*), Introd., p. XVII.

[5] See note above, p. 66.

[6] Clermont-Ganneau (*Recueil d'Archéologie orientale*, V, 1903, pp. 285-8) gives an epitaph from a stone found at Dor dating from the year 169-170 A. D., which gives a feminine form, Zoila. The inscription reads: *Ζωιλα ἐνθαδε κειται ἐτων τριακοντα φιλανδρος.* Γλσ' 'Απελλαιου *κς. θαρσει.* "Here lies Zoila (aged) thirty years, loving her husband. Year 233, the 26th (of the month) Apellaeos. Courage!" It is interesting to note that this name persisted in Dor into the second century A.D. Cler-Gan. suggests that the tyrant Zoilus may have introduced the name into the Onomasticon of the place.

The fickle inhabitants of Ptolemais, however, refused to receive Ptolemy when he arrived. But Zoilus and the people of Gaza came instead asking help against the Jews, who were ravaging their country. In fear of Ptolemy, Alexander thereupon abandoned the siege of Ptolemais. Craftily sending for Cleopatra to come against Ptolemy, Alexander at the same time concluded a league of friendship with him, promising four hunded talents of silver if he would dispose of Zoilus and give his country to the Jews. Ptolemy gladly made a league with Alexander, and turned upon and subdued Zoilus[2]. Afterward, however, when he learned that Alexander had planned to betray him into Cleopatra's power, he broke his solemn covenant and started to lay waste Alexander's domain, besides starting a siege against Ptolemais (*Ant.* XIII, 12 : 3, 4). Just what disposition was finally made of Dor during these troublous times after Zoilus was "subdued" is not clear.

The passage (*Ant.* XIII, 12 : 2, 4) reads:

Καταστησάμενος δὲ τὴν ἀρχὴν ὃν ᾤετο συμφέρειν αὐτῷ τρόπον στρατεύει ἐπὶ Πτολεμαΐδα, τῇ δὲ μάχῃ κρατήσας ἐνέκλεισε τοὺς ἀνθρώπους εἰς τὴν πόλιν καὶ περικαθίσας αὐτοὺς ἐπολιόρκει. τῶν γὰρ ἐν τῇ παραλίᾳ Πτολεμαῒς αὐτῷ καὶ Γάζα μόναι χειρωθῆναι ὑπελείποντο, καὶ Ζώιλος δὲ ὁ κατασχὼν τὸν Στράτωνος πύργον τύραννος καὶ Δῶρα. τοῦ δὲ Φιλομήτορος Ἀντιόχου καὶ τοῦ ἀδελφοῦ αὐτοῦ Ἀντιόχου, ὃς ἐπεκαλεῖτο Κυζικηνός, πολεμούντων ἀλλήλους καὶ τὴν αὐτῶν δύναμιν ἀπολλύντων ἦν οὐδεμία τοῖς Πτολεμαεῦσιν βοήθεια παρ' αὐτῶν. ἀλλὰ πονουμένοις τῇ πολιορκίᾳ Ζώιλος ὁ τὸν Στράτωνος πύργον κατεσχηκὼς [παρῆν] καὶ τὰ Δῶρα σύνταγμα τρέφων στρατιωτικὸν καὶ τυραννίδι ἐπιχειρῶν διὰ τὴν τῶν βασιλέων πρὸς ἀλλήλους ἅμιλλαν μικρὰ τοῖς Πτολεμαιεῦσι παρεβοήθει· ὀυδὲ γὰρ οἱ βασιλεῖς οὕτως εἶχον οἰκείως πρὸς αὐτούς, ὥστ' ἐλπίσαι τινὰ παρ' αὐτῶν ὠφέλειαν. ἑκάτεροι γὰρ ταὐτὸν τοῖς ἀθληταῖς ἔπασχον, οἳ τῇ δυνάμει μὲν ἀπηγορευκότες αἰσχυνόμενοι δὲ παραχωρῆσαι διετέλουν ἀργίᾳ καὶ ἀναπαύσει διαφέροντες τὸν ἀγῶνα. λοιπὴ δ' αὐτοῖς ἐλπὶς ἦν ἡ παρὰ τῶν Αἰγύπτου βασιλέων καὶ τοῦ Κύπρον ἔχοντος Πτολεμαίου τοῦ Λαθούρου, ὃς ὑπὸ τῆς μητρὸς Κλεοπάτρας τῆς ἀρχῆς ἐκπεσὼν εἰς Κύπρον παρεγένετο. πέμψαντες οὖν πρὸς τοῦτον οἱ Πτολεμαιεῖς παρεκάλουν ἐλθόντα σύμμαχον ἐκ τῶν Ἀλεξάνδρου χειρῶν αὐτοὺς ῥύσασθαι κινδυνεύοντας. ἐπελπισάντων δ' αὐτὸν τῶν πρέσβεων, ὡς διαβὰς εἰς Συρίαν ἕξει Γαζαίους συνεστῶτας μετὰ τῶν Πτολεμαιῶν καὶ Ζώιλον, ἔτι γε μὴν Σιδωνίους καὶ πολλοὺς ἄλλους αὐτῷ συλλήψεσθαι λεγόντων, ἐπαρθεὶς πρὸς τὸν ἔκπλουν ἔσπευδεν.

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[1] In *Ant.* XIII, 9:3; 10:1; 13:4 he is called Antiochus Grypus. Hölscher (*Die Quellen des Josephus*, p. 39) shows that this variation is due to the use of different sources, probably by Strabo.

[2] In view of Ptolemy's repudiation of their agreement upon learning of Alexander's double-dealing, it may be doubted whether Dor was finally actually delivered to the Jews. At least Dor is omitted from the list (contained in *Ant.* XIII, 15:4) of cities subject to Alexander, although Strato's Tower (Caesarea), its neighbor on the south, is mentioned. On the other side must be adduced the evidence of *Ant.* XIV, 4:4 (parallel to *B.J.*, I, 7:7—see below), where Dor is included among the cities taken from the Jews and restored to freedom as part of the province of Syria. Josephus' notoriously uncritical use of his sources (as well as his personal bias) complicates exceedingly the problem of deciding what actually is or is not fact in any given case.

(Then follows in 12:3 the account of a change of heart on the part of the inhabitants of Ptolemais and their decision to have nothing to do with Ptolemy. Although he learned of this, Ptolemy came straight on and pitched camp near the city. But when the people would have nothing to do with him, he was at a loss what to do.)

XIII, 12:4. ἐλθόντων δὲ πρὸς αὐτὸν Ζωίλου τε καὶ τῶν Γαζαίων, καὶ δεομένων συμμαχεῖν αὐτοῖς πορθουμένης αὐτῶν τῆς χώρας ὑπὸ τῶν Ἰουδαίων καὶ Ἀλεξάνδρου, λύει μὲν πολιορκίαν δείσας τὸν Πτολεμαῖον ὁ Ἀλέξανδρος, ἀπαγαγὼν δὲ τὴν στρατιὰν εἰς τὴν οἰκείαν ἐστρατήγει τὸ λοιπόν, λάθρᾳ μὲν τὴν Κλεοπάτραν ἐπὶ τὸν Πτολεμαῖον μεταπεμπόμενος, φανερῶς δὲ φιλίαν καὶ συμμαχίαν πρὸς αὐτὸν ὑποκρινόμενος· καὶ τετρακόσια δ' ἀργυρίου τάλαντα δώσειν ὑπέσχετο, χάριν ἀντὶ τούτων αἰτῶν Ζωίλον ἐκ ποδῶν ποιήσασθαι τὸν τύραννον καὶ τὴν χώραν τοῖς Ἰουδαίοις προσνεῖμαι. τότε μὲν οὖν ὁ Πτολεμαῖος ἡδέως τὴν πρὸς τὸν Ἀλέξανδρον ποιησάμενος φιλίαν χειροῦται τὸν Ζωίλον, ὕστερον δ' ἀκούσας λάθρᾳ διαπεμπόμενον αὐτὸν πρὸς τὴν μητέρα αὐτοῦ Κλεοπάτραν, λύει τοὺς γεγενημένους πρὸς αὐτὸν ὅρκους, καὶ προσβαλὼν ἐπολιόρκει τὴν Πτολεμαΐδα μὴ δεξαμένην αὐτόν . . . .

XIII, 12:2 "When he (i. e., Alexander Jannaeus) had arranged the government in the way he considered most advantageous for himself, he made an expedition against Ptolemais; and having conquered in a battle he shut up the men in the city, and sat round about them and began a siege. For, of the cities on the coast, there alone remained to be conquered by him Ptolemais and Gaza, besides the tyrant Zoilus who held Strato's Tower and Dor. Now inasmuch as Antiochus Philometer and his brother Antiochus, who was called Cyzicenus, were waging war against one another and destroying one another's armies, the people of Ptolemais could get no aid from them. But when they were in distress on account of the siege Zoilus, who possessed Strato's Tower and Dor and maintained a body of soldiers, and acted as tyrant because of the contest between the kings, came and brought a little help to the people of Ptolemais. Nor indeed were the kings so friendly disposed toward them that they could hope for any succour from them. For both were in the same predicament as wrestlers who, though they have become deficient in strength, are yet ashamed to yield, and so continue lazily and prolong the contest by resting. Their sole remaining hope was in the kings of Egypt, and from Ptolemy Lathyrus who was holding Cyprus, and who came to Cyprus after being cast out from his rule by his mother Cleopatra. The people of Ptolemais therefore sent to this man and besought him to deliver them, endangered as they were, out of the hands of Alexander. And since the ambassadors held forth hopes to him that when once he had crossed over into Syria he would have the people of Gaza joining with those of Ptolemais; and as they also said that Zoilus and the Sidonians besides and many others would assist him; he was elated and hurried the preparations for sailing."

(The people of Ptolemais decide not to receive Ptolemy. He is greatly concerned.)

12:4. "But when both Zoilus and the people of Gaza came to him and desired that he would be their ally because their country was laid waste by the Jews and by Alexander—Alexander, being afraid of Ptolemy, raised the siege. And having led away his army into his own country, he used strategy afterward, by secretly summoning Cleopatra to come against Ptolemy, but publicly pretending friendship and a real alliance with him. And he agreed to give four hundred talents of silver, desiring in return that he should put Zoilus the tyrant out of the way and allot his country to the Jews. And then indeed Ptolemy gladly made this league of friendship with Alexander, and subdued Zoilus; but when he afterward heard that he had secretly sent to his mother Cleopatra, he broke the oaths he had made to him, and attacked and besieged Ptolemais because it refused to receive him."

Strabo is most probably Josephus' source of information in this section. In XIII, 12:6 Josephus expressly cites Strabo and Nicolaus (of Damascus) as his sources. A comparison of XIII, 10:4 indicates that, of these two, Strabo was more probably the author of the section XIII, 12:6 (and so of 12:2–4), concerned as they both are with Ptolemy[1]. In fact, the so-called "Syriaca" would all seem to belong to this writer[2]. Destinon[3], however, holds that the direct use of Strabo and other sources by Josephus was limited to the passages where the name of the source is expressly cited. In other instances he leaves open the possibility that the anonymous historian he supposes Josephus used as source may have utilized these authors. It appears quite probable therefore, that Strabo was really the source of the sections under discussion.

ANTIQUITIES XIII, 15:4.

Dor is not included by Josephus in his catalogue of Syrian, Idumean and Phoenician cities held by Alexander Jannaeus toward the close of his career (*Ant.* XIII, 15:4). The list begins with *Στράτωνος πύργον*, just south of Dor, and follows the coast toward the south. As we have seen above, it is questionable whether the Jews ever exercised any real control over Dor. This in spite of the fact that Josephus further on in this same passage includes *Καρμήλιον ὄρος* ("Mount Carmel") and *ἄλλας τε πόλεις προτευούσας τῆς Συρίας ἦσαν κατεστραμμένοι* ("other prominent cities of Syria which had been destroyed"). It would be unsafe to include Dor in the list on the basis of such uncertain generalizations by Josephus. It has already been suggested that there is no clear statement in Ant. XIII, 12:2, 4 to the effect that Dor was ever turned over to Alexander. We must therefore disagree with Schürer[1] in his statement "aber auch Dora *muss* zum Gebiet Alexanders gehört haben[2]." All we can say is that there is a possibility that it was subject to him for a time.

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[1] Timagenes (quoted in 12:5) was probably one of Strabo's sources, known to Josephus only through the latter.

[2] Hölscher, *Die Quellen des Josephus*, pp. 15, 39; Schürer in Hauck-Herzog, s.v. Josephus. Hölscher maintains (p. 40) that Polybius and Posidonius are in turn Strabo's sources. For the period after 143 B.C. (and therefore for the time of this passage) Hölscher believes Posidonius is the original source.

[3] *Die Quellen des Fl. Josephus*, pp. 57 ff.

ANT. XIV. 4:4 AND B.J., I, 7:7.

After his capture of Jerusalem in 63 B.C., Pompey, according to Josephus, proceeded to take from the Jews many of the cities that were at that time recognized as part of their realm. He thereby greatly reduced the extent of Jewish territory. Dor is included by Josephus among the cities restored to their own inhabitants and incorporated within the Roman province of Syria. From Pompey's time Dor seems, therefore, to have been directly under Roman rule. Josephus gives two accounts of these changes, one in Ant. XIV, 4:4 and a second in B.J. I, 7:7:

καὶ τὰ μὲν Ἱεροσόλυμα ὑποτελῆ φόρον Ῥωμαίοις ἐποίησεν, ἃς δὲ πρότερον οἱ ἔνοικοι πόλεις ἐχειρώσαντο τῆς κοίλης Συρίας ἀφελόμενος ὑπὸ τῷ σφετέρῳ στρατηγῷ ἔταξεν καὶ τὸ σύμπαν ἔθνος ἐπὶ μέγα πρότερον αἰρόμενον ἐντὸς τῶν ἰδίων ὅρων συνέστειλεν. καὶ Γάδαρα μὲν μικρὸν ἔμπροσθεν καταστραφεῖσαν ἀνέκτισεν Δημητρίῳ χαριζόμενος τῷ Γαδαρεῖ ἀπελευθέρῳ αὐτοῦ· τὰς δὲ λοιπὰς Ἵππον καὶ Σκυθόπολιν καὶ Πέλλαν καὶ Δῖον καὶ Σαμάρειαν ἔτι τε Μάρισαν καὶ Αζωτον καὶ Ἰάμνειαν καὶ Ἀρέθουσαν τοῖς οἰκήτορσιν ἀπέδωκεν. καὶ ταύτας μὲν ἐν τῇ μεσογείῳ χωρὶς τῶν κατεσκαμμένων, Γάζαν δὲ πρὸς τῇ θαλάττῃ καὶ Ἰόππην καὶ Δῶρα καὶ Στράτωνος πύργον, ἣ κτίσαντος αὐτὴν Ἡρώδου μεγαλοπρεπῶς καὶ λιμέσιν τε καὶ ναοῖς κοσμήσαντος, Καισάρεια μετωνομάσθη πάσας ὁ Πομπήιος ἀφῆκεν ἐλευθέρας καὶ προσένειμεν τῇ ἐπαρχίᾳ.

"And he made Jerusalem tributary to the Romans, and took away the cities of Coelesyria which the inhabitants (of Judaea) had in former times subdued, and he put them under their own praetor and confined the whole nation which had before so greatly elevated itself, within its own borders. And he rebuilt Gadara, which had shortly before been demolished, to gratify Demetrius of Gadara, his freedman. And the rest of the cities, Hippos, Scythopolis, Pella, Dios, and Samaria, as well as Marissa, Azotus, Jamnia, and Arethusa, he restored to their inhabitants: and these were in the interior; as well as those that had been demolished. And also on the sea-coast, Gaza, and Joppa, and Dor, and Strato's Tower; this last Herod rebuilt in glorious fashion and adorned it with havens and temples, and changed its name to Caesarea. All these Pompey left free and joined to the prefecture."

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[1] *G.J.V.* I, 285.

[2] Schürer's further statement (*l.c.*) that Zoilus was subdued by Alexander is not accurate. According to the record it was Ptolemy Lathyrus who subdued Zoilus.

B. J. I, 7:7.

Ἀφελόμενος δὲ τοῦ ἔθνους καὶ τὰς ἐν κοίλῃ Συρίᾳ πόλεις, ἃς εἷλον, ὑπέταξεν τῷ κατ' ἐκεῖνο Ῥωμαίων στρατηγῷ [κατατεταγμένῳ] καὶ μόνοις αὐτοὺς τοῖς ἰδίοις ὅροις περιέκλεισεν. ἀνακτίζει δὲ καὶ Γάδαρα ὑπὸ Ἰουδαίων κατεστραμμένην Γαδαρεῖ τινὶ τῶν ἰδίων ἀπελευθέρων Δημητρίῳ χαριζόμενος. ἠλευθέρωσεν δ' ἀπ' αὐτῶν καὶ τὰς ἐν τῇ μεσογείᾳ πόλεις, ὅσας μὴ φθάσαντες κατέσκαψαν, Ἵππον Σκυθόπολίν τε καὶ Πέλλαν καὶ Σαμάρειαν καὶ Ἰάμνειαν καὶ Μάρισαν Ἄζωτόν τε καὶ Ἀρέθουσαν, ὁμοίως δὲ καὶ τὰς παραλίους Γάζαν Ἰόπην Δῶρα καὶ τὴν πάλαι Στράτωνος πύργον καλουμένην, ὕστερον δὲ μετακτισθεῖσάν τε ὑφ' Ἡρώδου βασιλέως λαμπροτάτοις κατασκευάσμασιν καὶ μετονομασθεῖσαν Καισάρειαν. ἃς πάσας τοῖς γνησίοις ἀποδοὺς πολίταις κατέταξεν εἰς τὴν Συριακὴν ἐπαρχίαν. παραδοὺς δὲ ταύτην τε καὶ τὴν Ἰουδαίαν καὶ τὰ μέχρις Αἰγύπτου καὶ Εὐφράτου Σκαύρῳ διέπειν . . . .

"He also took away from the nation those cities in Coelesyria which they had taken, and made them subject to him that had been appointed Roman praetor there, and shut them in to their own proper bounds. He also rebuilt Gadara, that had been demolished by the Jews, to gratify a certain Demetrius of Gadara, who was one of his own freedmen. He also freed from their domination cities that lay in the interior, such as they had not previously demolished, Hippos, and Scythopolis, besides Pella, and Samaria, and Jamnia, and Marissa, as well as Azotus and Arethusa; in like manner dealt he with the maritime cities, Gaza, Joppa, Dor, and that which was anciently called Strato's Tower, but was afterward rebuilt with most magnificent edifices by Herod the King, and its name changed to Caesarea. All of these he delivered over to their true citizens and put them under the province of Syria. And he committed this province, together with Judea and the countries as far as Egypt and the Euphrates to Scaurus to govern . . . ."

The omission of Dios in Bellum Judaicum I, 7:7 above is probably due to an error in copying[1]. It seems fairly well agreed that

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[1] Destinon, *Die Quellen des Fl. Jos.*, p. 14; Hölscher, *Die Quellen des Jos.*, p. 20.

Nicolaus of Damascus is Josephus' principal source in both these passages[1]. Destinon (pp. 17 ff.) accounts for the difference (cp. the addition of the name "Scaurus" in *B.J.*) on the theory that while Josephus used Nicolaus as his source in both the Antiquities and the Jewish War, he excerpted the two histories independently, using or omitting each time such material as he chose. Hölscher is inclined to find in the variations in the two accounts evidence of the use by Josephus of an additional source.

As has already been suggested, the inclusion in this passage of Dor among the cities subject to the Jews is open to question. In the troublous days of party dissension that followed the death of the ambitious invader, Alexander Jannaeus, it is hardly probable that the nation could have kept control of its outlying dependencies[2]. In the absence of definite corroboration of the details of Josephus' account, we must hold in suspense a decision in regard to Dor's relations to Judaea at the time of Pompey's arrival. But we have no reason to doubt that Dor was made by him a so-called "free" city[3]. The coins of the city establish this fact beyond any possibility of a doubt[4].

ANTIQUITIES XIV, 5:3 AND BELLUM JUDAICUM I, 8:4.

In Ant. XIV, 5:3 all the manuscripts except Pal. include Δῶρα among the cities restored by Gabinius, the proconsul, in 57 B. C. The parallel passage in B.J. I, 8:4 has Δώρεος in most manuscripts; but two good manuscripts read Ἀδώρεος. The correct reading is undoubtedly Ἄδωρα (or Ἀδώρεος). The fact that it is mentioned along with Marisa points to the Idumean city Adora as the one here referred to. Niese is therefore correct in reading Ἄδωρα in the passage in Antiquities. How easily the change from Dora to Adora can take place is illustrated by the passage Ant. XIII, 6:5, where all the manuscripts read *Δῶρα πόλιν τῆς Ἰδουμαίας*, yet where, as a comparison of 1 Macc. 13:20 proves, Ἄδωρα is clearly meant[5].

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[1] So Destinon, Hölscher, Schürer, Margoliouth.

[2] It has been suggested above that we are none too certain that Dor was ever taken in possession by the Jews.

[3] These "free" cities were, of course, subject to military duties under Rome. Cp. Schürer, *G.J.V.* II, 105.

[4] Hill, *Greek Coins of Phoenicia*, p. 117.

[5] Schürer, *G.J.V.* II, 7; Reland, *Palaestina*, pp. 738–741; cp. also *Contra Ap.* II, 9 below.—Perhaps the similarity in uncial script between Δ and Α may have had something to do with the miswriting of Ἄδωρα.

In view of the fact that Dor is not included in this corrected list, the statement of Cook (in *Enc. Bib.*, s.v. Dor) to the effect that "Gabinius restored the town and harbor (56 B. C.)" must be corrected. Similarly, Guérin's declaration (in *Samarie* 2:312 f.) to the same effect is incorrect.

ANTIQUITIES XV, 4:1 AND BELLUM JUDAICUM I, 18:5.

Cleopatra's attempt to persuade Antony to deprive Herod the Great of his kingdom and to turn all Judea over to her was rendered ineffectual through Herod's presents and skillful address (*Ant.* XIII, 38). Antony did, however, bestow upon her some of Herod's territory about Jericho; in addition to this he gave her all the (coast) cities south of the Eleutherus river, except Tyre and Sidon. Dor would be included in this gift. The date of this cession was c. 34 B. C. With the defeat of Antony at Actium (31 B. C.), if not before, Cleopatra's possession of these tributary cities of course ceased. Augustus was shortly won over by the generous hospitality Herod accorded him and his army on their march through Syria. Arrived in Egypt, he restored to Herod the part of his realms taken by Cleopatra, adding thereto among others the coast cities Gaza, Anthedon, Joppa, and Strato's Tower. Dor is not included here, and we have no reason to believe that Herod's realm ever extended farther north on the coast than Caesarea.

The account of the gift of the coast cities by Antony to Cleopatra is thus recorded in Ant. XV, 4:1 (end):

δίδωσιν δὲ καὶ τὰς ἐντὸς Ἐλευθέρου ποταμοῦ πόλεις ἄχρις Αἰγύπτου χωρὶς Τύρου καὶ Σιδῶνος, ἐκ προγόνων εἰδὼς ἐλευθέρας, πολλὰ λιπαρούσης αὐτῆς αὐτῇ δοθῆναι.

"Thus he gave her the cities that were this side of the river Eleutherus as far as Egypt; he made exception however of Tyre and Sidon (for he knew they had been free cities from the time of their ancestors), although she frequently begged that these might also be given her."

The parallel account in B.J. I, 18:5 reads:

πολλὰ δὲ τῆς χώρας αὐτῶν ἀποτεμόμενος καὶ δὴ καὶ τὸν ἐν Ἱεριχοῦντι φοινικῶνα ἐν ᾧ γεννᾶται τὸ βάλσαμον, δίδωσιν αὐτῇ πόλεις τε πλὴν Τύρου καὶ Σιδῶνος τὰς ἐντὸς Ἐλευθέρου ποταμοῦ πάσας.

"He also cut off a great deal of their country; nay, even the palm plantation at Jericho, where the balsam grows, and gave them to her; as well as all the cities this side of the river Eleutherus, Tyre and Sidon excepted."

Plutarch[1] includes in this gift to Cleopatra, Phoenicia, Coelesyria, Cyprus, a large part of Cilicia, the part of Judea that bears the balsam, and the part of Nabatean Arabia toward the Mediterranean.

Both passages from Josephus above are to be attributed to Nicolaus of Damascus as their source[2]. In the Antiquities (XV, 4:2, 4) Josephus does not state, but distinctly implies that the Jericho region (as in the account in *B.J.*) was given to Cleopatra, from whom Herod was obliged to rent it. In these parallel narratives, as elsewhere, Josephus is very free in his adaptation of his sources.

If, as seems probable, Dor is to be numbered among the coast cities in this account, we gain the information that Dor was, for a short time after 34 B. C., at least nominally tributary to Cleopatra, queen of Egypt.

ANTIQUITIES XV, 9:6 AND BELLUM JUDAICUM I, 21:5.

In connection with his account of the building of Caesarea by Herod the Great, Josephus mentions Joppa and Dor. These latter are described as smaller maritime cities, unfit for harbors because of the prevalence of violent winds from the south. As a consequence merchants are obliged to anchor their ships in the sea opposite them. According to Josephus it was for the purpose of providing a safe anchorage on this inhospitable shore between Dor and Joppa that Herod established the port of Caesarea. The account in the Antiquities (XV, 9:6) reads as follows:

κεῖται μὲν γὰρ ἡ πόλις (i. e., Caesarea) *ἐν τῇ Φοινίκῃ κατὰ τὸν εἰς Αἴγυπτον παράπλουν Ἰόππης μεταξὺ καὶ Δώρων, πολισμάτια ταῦτ᾽ ἐστὶν παράλια δύσορμα διὰ τὰς κατὰ λίβα προσβολάς, αἳ ἀεὶ τὰς ἐκ τοῦ πόντου θῖνας ἐπὶ τὴν ᾐόνα σύρουσαι καταγωγὴν οὐ διδόασιν, ἀλλ᾽ ἔστιν ἀναγκαῖον ἀποσαλεύειν τὰ πολλὰ τοὺς ἐμπόρους ἐπ᾽ ἀγκύρας.*

"This city (i. e. Caesarea) is situated in Phoenicia, on the passage by sea to Egypt, between Joppa and Dor, which are rather small maritime cities and unfit for havens, because of the violent south winds which, constantly rolling the sands that come from the sea upon the shores, do not permit ships to lie at their station; but generally the merchants are obliged to lie at anchor in the sea itself."

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[1] *Ant.* 36. See ed. Dochner, II, *Vitae* 2, p. 1111.

[2] So Hölscher, p. 25; Destinon, p. 120.

The parallel passage is found in B.J. I, 21:5:

μεταξὺ γὰρ Δώρων καὶ Ἰόπης, ὧν ἡ πόλις μέση κεῖται, πᾶσαν εἶναι συμβέβηκεν τὴν παράλιον ἀλίμενον, ὡς πάντα τὸν τὴν Φοινίκην ἐπ᾽ Αἰγύπτου παραπλέοντα σαλεύειν ἐν πελάγει διὰ τὴν ἐκ λιβὸς ἀπειλήν, ᾧ καὶ μετρίως ἐπαυρίζοντι τηλικοῦτον ἐπεγείρεται κῦμα πρὸς ταῖς πέτραις, ὥστε τὴν ὑποστροφὴν τοῦ κύματος ἐπὶ πλεῖστον ἐξαγριοῦν τὴν θάλασσαν.

"For it happened that all the coast between Dor and Joppa (between which the city lies) was harborless, so that every ship that sailed from Phoenicia to Egypt was obliged to lie in the sea on account of the threatening south wind; if this wind blow but a little fresh, such waves are raised and dash upon the rocks, that upon their retreat the sea rages for a long time."

It is worthy of notice that Caesarea is here (*Ant.* XV, 9:6) referred to as a city of Phoenicia. The fact that Caesarea is called Phoenician[1], and the additional fact that Greek geographers[2] make Dor a city of that same country, would tend to strengthen our doubt concerning any subjugation of Dor by the Jews. Evidently, too, the harbor at Dor was a very poor one. It was not until a much later period that the double harbor[3] was built. The building by Herod of good harbors at Caesarea, thus giving that city a great advantage as a port and gate to the surrounding country, doubtless contributed to the decline of neighboring Dor.

Nicolaus of Damascus is generally conceded to be Josephus' source for the material[4] here. As usual Josephus has made independent use of Nicolaus' material in his Antiquities and Bellum Judaicum, so that the accounts are by no means identical. The narratives agree, however, in picturing Dor as a city without good facilities as a seaport, although evidently not without some trading activity.

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[1] For fuller discussion of the word Phoenicia, see on *Contra Ap.* II, 9, below.

[2] E. g., Claudius Iolaus in *Steph. Byz.*

[3] See chapter on Topography.

[4] Destinon, p. 120; Hölscher, p. 26.

ANTIQUITIES XIX, 6:3, 4a^{a}.

Toward the beginning of the reign of Agrippa I (41–44 A. D.) we learn of the existence of a Jewish synagogue in Dor. A mob of young men carried a statue of Caesar into this synagogue and set it up there. Agrippa had of course no authority in Dor, which had remained under the rule of the Roman governor of Syria. Accordingly, he complained to Publius Petronius, who was then at the head of affairs in the province of Syria[1]. According to Josephus' story, Petronius thereupon wrote a letter to the magistrates of Dor, reminding them of the liberties granted to the Jews by Claudius, and commanding them to discover and punish those guilty of this act of impiety. This letter, together with the record of the incident, is contained in Ant. XIX, 6:3, 4a^{a} :

παντάπασιν δὲ ὀλίγου χρόνου διελθόντος Δωρῖται νεανίσκοι τῆς ὁσιότητος προτιθέμενοι τόλμαν καὶ πεφυκότες εἶναι παραβόλως θρασεῖς Καίσαρος ἀνδριάντα κομίσαντες εἰς τὴν τῶν Ἰουδαίων συναγωγὴν ἀνέστησαν. σφόδρα τοῦτο Ἀγρίππαν παρώξυνεν · κατάλυσιν γὰρ τῶν πατρίων αὐτοῦ νόμων ἐδύνατο. ἀμελλητὶ δὲ πρὸς Πούπλιον Πετρώνιον, ἡγεμὼν δὲ τῆς Συρίας οὗτος ἦν, παραγίνεται καὶ καταλέγει τῶν Δωριτῶν. ὁ δ' οὐχ ἧττον ἐπὶ τῷ πραχθέντι χαλεπήνας, καὶ γὰρ αὐτὸς ἔκρινεν ἀσέβειαν τὴν τῶν ἐννόμων παράβασιν, τοῖς προεστῶσι τῶν Δωριτῶν σὺν ὀργῇ ταῦτ᾽ ἔγραψεν. „Πούπλιος Πετρώνιος πρεσβευτὴς Τιβερίου Κλαυδίου Καίσαρος Σεβαστοῦ Γερμανικοῦ Δωριέων τοῖς πρώτοις λέγει. ἐπειδὴ τοσαύτῃ τόλμῃ ἀπονοίας τινὲς ἐχρήσαντο ἐξ ὑμῶν, ὥστε μηδὲ διὰ τὸ προτεθῆναι διάταγμα Κλαυδίου Καίσαρος Σεβαστοῦ Γερμανικοῦ περὶ τοῦ ἐφίεσθαι Ἰουδαίους φυλάσσειν τὰ πάτρια πεισθῆναι ὑμᾶς αὐτῷ, τἀναντία δὲ πάντα πρᾶξαι, συναγωγὴν Ἰουδαίων κωλύοντας εἶναι διὰ τὸ μεταθεῖναι ἐν αὐτῇ τὸν Καίσαρος ἀνδριάντα, παρανομοῦντας οὐκ εἰς μόνους Ἰουδαίους, ἀλλὰ καὶ εἰς τὸν αὐτοκράτορα, οὗ ὁ ἀνδριὰς βέλτιον ἐν τῷ ἰδίῳ ναῷ ἢ ἐν ἀλλοτρίῳ ἐτίθετο καὶ ταῦτα ἐν τῷ τῆς συναγωγῆς τόπῳ, τοῦ φύσει δικαιοῦντος ἕνα ἕκαστον τῶν ἰδίων τόπων κυριεύειν κατὰ τὸ Καίσαρος ἐπίκριμα · τοῦ γὰρ ἐμοῦ ἐπικρίματος μιμνήσκεσθαι γελοῖόν ἐστιν μετὰ τὸ τοῦ αὐτοκράτορος διάταγμα τοῦ ἐπιτρέψαντος Ἰουδαίοις τοῖς ἰδίοις ἔθεσι χρῆσθαι, ἔτι μέντοι γε καὶ συμπολιτεύεσθαι τοῖς Ἕλλησιν κεκελευκότος · τοὺς μὲν παρὰ τὸ διάταγμα τοῦ Σεβαστοῦ τοιαῦτα τετολμηκότας, εφ᾽ ᾧ καὶ αὐτοὶ ἠγανάκτησαν οἱ δοκοῦντες αὐτῶν ἐξέχειν οὐ τῇ ἰδίᾳ προαιρέσει γεγενῆσθαι λέγοντες ἀλλὰ τῇ τοῦ πλήθους ὁρμῇ, ὑπὸ ἑκατοντάρχου Πρόκλου Οὐιτελλίου ἐκέλευσα ἐπ᾽ ἐμὲ ἀναχθῆναι τῶν πεπραγμένων λόγον ἀποδώσοντας, τοῖς δὲ πρώτοις ἄρχουσι παραινῶ, εἰ μὴ βούλονται δοκεῖν κατὰ τὴν αὐτῶν προαίρεσιν γεγενῆσθαι τὸ ἀδίκημα, ἐπι-

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[1] P. Petronius was governor 39-42 A. D. (Riggs, *Hist. of the Jewish People*, see Chart.)

δεῖξαι τοὺς αἰτίους τῷ ἑκατοντάρχῃ μηδεμιᾶς στάσεως μηδὲ μάχης ἐῶντας ἀφορμὴν γενέσθαι, ἥνπερ δοκοῦσίν μοι θηρεύεσθαι διὰ τῶν τοιούτων ἔργων, κἀμοῦ καὶ τοῦ τιμιωτάτου μοι βασιλέως Ἀγρίππου οὐδενὸς μᾶλλον προνοουμένων, ἢ ἵνα μὴ ἀφορμῆς δραξάμενοι τὸ τῶν Ἰουδαίων ἔθνος ὑπὸ τῆς ἀμύνης προφάσει συναθροισθὲν εἰς ἀπόνοιαν χωρῇ· ἵνα δὲ γνωριμώτερον ᾖ, τί καὶ ὁ Σεβαστὸς περὶ ὅλου τοῦ πράγματος ἐφρόνησε, τὰ ἐν Ἀλεξανδρείᾳ αὐτοῦ διατάγματα προτεθέντα προσέθηκα, ἅπερ εἰ καὶ γνώριμα πᾶσιν εἶναι δοκεῖ τότε καὶ ἐπὶ τοῦ βήματος ἀνέγνω ὁ τιμιώτατός μοι βασιλεὺς Ἀγρίππας δικαιολογησάμενος περὶ τοῦ μὴ δεῖν αὐτοὺς ἀφαιρεθῆναι τῆς τοῦ Σεβαστοῦ δωρεᾶς. εἴς τε οὖν τὸ λοιπὸν παραγγέλλω μηδεμίαν πρόφασιν στάσεως μηδὲ ταραχῆς ζητεῖν, ἀλλ᾽ ἑκάστους τὰ ἴδια ἔθη θρησκεύειν." Πετρώνιος μὲν οὖν οὕτω προυνόησε διορθώσεως μὲν τὸ παρανομηθὲν ἤδη τυχεῖν, γενέσθαι δὲ παραπλήσιον μηδὲν εἰς αὐτούς.

"But after a very little while the young men of Dor, preferring daring to piety and being by nature boldly insolent, carried a statue of Caesar into a synagogue of the Jews[1] and set it up. This act provoked Agrippa exceedingly; for it tended toward the dissolution of the laws of his nation. He therefore at once came before Publius Petronius, who was then at the head of Syria, and accused the people of Dor. Nor did he less resent what had been done (than did Agrippa). For he judged it an act of impiety to transgress against lawful customs. So he angrily wrote the following to the rulers of Dor: 'Publius Petronius, president under Tiberius Claudius Caesar Augustus Germanicus, to the magistrates of the inhabitants of Dor, says: Since some of you have displayed such bold madness, after the edict of Claudius Caesar Augustus Germanicus was issued, for permitting the Jews to observe their country's customs, not to obey the same; but have done everything contrary to it, in preventing the Jews from assembling in their synagogue by removing Caesar's statue and setting it up therein, and have committed an outrage not only against the Jews but also against the Emperor himself, whose statue was more fitly placed in his own temple than in a foreign one (and this is in a place of assembly); whereas it is but natural justice that every one should have rule over the places that belong peculiarly to them, in accordance with the determination of Caesar; not to speak of my own determination, which it would be ridiculous to mention after the Emperor's edict, which gives to Jews the right to observe their own customs, as well as commanding that they enjoy equal political privileges with the Greeks. I command, therefore, that those men who, contrary to the edict of Augustus, have dared do this thing (at which those very men who appear to be most prominent among them are indignant also, and allege for themselves that it was not done with their consent but by the violence of the multitude), be brought before me by the centurion, Proculus Vitellius, that they may give account of the things done. Furthermore, I urge the principal magistrates, unless they wish to have it seem that this misdeed was done with their consent, to point out to the centurion those that are to blame, so as to furnish no occasion for any sort of uprising or quarrel to arise; which they seem to me to hunt after who are concerned in such doings; while both I myself and King Agrippa, for whom I have the sincerest respect, have nothing more under our care, than that the Jewish nation may not find an occasion of getting together under the pretext of avenging themselves, and become uncontrollable. And that it may be better known what Augustus also has resolved about the whole matter, I have subjoined the edicts he lately published in Alexandria[1], which, although they may be well known to all, yet did King Agrippa, for whom I have the sincerest respect, read them at that time before my tribunal, pleading that they ought not to be deprived of this gift which Augustus granted. For the time to come, therefore, I charge you to seek no occasion of any sort of sedition or disturbance, but that each one be allowed to observe his own religious customs.' 4. Thus, then, did Petronius provide that the breach of the law already committed should be corrected, and that no such thing should afterward happen to them (i. e., the Jews)."

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[1] Cp. the command of Caligula to Petronius to set up his statue in the temple (*Ant.* XVIII, 8:2).

Hölscher[2] ascribes this section of Josephus to a source which is concerned principally with the Herodian family, and which he therefore names the "Herodäergeschichte"[3]. The author of this source he describes as a pious Jew, but with broader views than those of the Pharisees. This Jew in turn had as his sources possibly Ptolemy of Ascalon, Cluvius Rufus, and state documents, in addition to his own general information in regard to the events concerned. It is probable that Josephus dealt quite freely with his sources in this part of the Antiquities (as elsewhere) and that we ought to ascribe more to his free composition than Hölscher is inclined to do.

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[1] *Ant.* XIX, 5:2, 3.

[2] *Quellen des Josephus*, pp. 68, 79, 80.

[3] This source Hölscher finds traces of in *Ant.* XIV–XVII; *Ant.* XVIII–XX he derives practically entire from it.

This edict of Petronius is probably the composition of some author used by Josephus as his source. Doubtless some such edict was promulgated, and the one given here is a fairly good representation of its general purport. Ancient historians felt free to compose such letters where they had no access to the original copies[1].

It is of interest to notice that in 42 A. D. there lived in Dor Jews sufficient in number to maintain a synagogue of their own. As in other cities in the Greek world they appear to have been none too popular with the citizens of the place. Agrippa I appears as the protagonist of the Jews in cities beyond his own realm. This he could do effectually because of the favor he had won with Claudius. Josephus does not give the sequel to his story; he has fulfilled his purpose in indicating the favorable attitude of the Romans toward the Jews, especially as this is illustrated in Agrippa's relations with the Roman governor and with the emperor.

CONTRA APIONEM II, 9.

Josephus (*Contra Apionem* II, 9) refers to a fable quoted by Apion from a Greek author whose name appears in manuscripts as Mnafeas[2]. This story relates how, while the Jews were at war with the Idumeans, a certain Zabidus came out of Dora, a city of Idumea. Zabidus promised to deliver Apollo, the god of Dora, into the hands of the Jews, and to bring the god into the temple, if they would all depart thence. To this the Jews agreed. Thereupon Zabidus set three rows of lamps on a wooden frame, which he fastened about him. The Jews, when he passed by them at a distance, thought they beheld a walking star. In this way Zabidus gained entrance into the temple, and carried off to Dora the golden head of an ass that was there.

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[1] See the discussion of literary habits of ancient narrators in Torrey, *Ezra Studies*, pp. 148 ff.

[2] Niese conjectures Mnaseas, the pupil of Eratosthenes, c. 200 B. C. (Schür., *G.J.V.* II, 7).

In answer to this tale, Josephus says that Apion has loaded the ass (that is, himself) with a burden of ridiculous lies. The first of these lies is his statement that there is in Idumea a city named Dor:

καὶ γὰρ τόπους οὐκ ὄντας γράφει καὶ πόλεις οὐκ εἰδὼς μετατίθησιν· ἡ μὲν γὰρ Ἰδουμαία τῆς ἡμετέρας χώρας ἐστὶν ὅμορος, κατὰ Γάζαν κειμένη, καὶ Δῶρα ταύτης ἐστὶν οὐδεμία πόλις· τῆς μέντοι Φοινίκης παρὰ τὸ Καρμήλιον ὄρος Δῶρα πόλις ὀνομάζεται, μηδὲν ἐπικοινωνοῦσα τοῖς Ἀπίωνος φλυαρήμασι· τεσσάρων γὰρ ἡμερῶν ὁδὸν τῆς Ἰδουμαίας ἀφέστηκεν.

"For he writes of places that do not exist, and being unacquainted with cities he changes them about. For Idumea borders upon our country, and is near Gaza; in it there is no such city as Dor. There is, to be sure, a Phoenician city near Mount Carmel named Dor, which, however, has nothing to do with Apion's absurdities; for it is distant four days journey from Idumea."

Although Josephus so stoutly maintains that there is no such city as Dor in Idumea, it seems quite certain that Adora of Idumea is meant in this story. We have seen in Ant. XIV. 5:3 (parallel, *B.J.*, I, 8:4) that the initial A was easily dropped. This may have happened either through corruptions in texts or in popular speech. It seems that this town Adora is called Dura at the present time[1].

It would appear from the reference to it above that, at the time of the writing of the treatise Contra Apionem (i. e., c. 95 A. D.), Dor was known as a city, doubtless of some importance, in Phoenicia. What is here meant by "Phoenicia" is not an easy question to decide, especially as the meaning of the name seems to have varied at different periods. In some documents of the Greek period the term *Κόιλη Συρία καὶ Φοινίκη* ("Coele-Syria and Phoenicia") is used to designate the whole Syrian district "beyond (west of) the river (Euphrates)"[2]. The boundaries between Coele-Syria and Phoenicia evidently varied greatly. In the last century B. C. Coele-Syria seems to have been ordinarily applied only to the district between Lebanon and Anti-Lebanon[3]. Hölscher[4] argues with considerable probability that the coast cities were organised by the Romans soon after Pompey's invasion into a separate official district, to which the name Phoenicia was usually applied. This may explain the frequent reference to Dor by later geographers as a "Phoenician" city. It must also be remembered that the Philistines seem to have been pushed to the south at an early period, and that the interests and connections of Dor from comparatively early times seem to have been with the coastland north of Mt. Carmel. This relationship probably even antedated the cession of Dor and Joppa to Eshmunazar by the Persian king[1]; certainly that inclusion of Dor within the domains of Sidon strengthened its Phoenician character. The list of cities subject to Tyre and Sidon contained in Scylax[2] indicates that the coast south of Carmel was in his time (c. 350 B.C.) essentially Phoenician.

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[1] G.A.S., *Hist. Geog.*, map; Schür., *G.J.V.* II, 7.

[2] Torrey, *Ezra Studies*, p. 83.—This term is used as the equivalent of the Biblical עבר הנהר.

[3] Hölscher, *Palästina*, p. 12; Torrey, *l. c.*

[4] *L. c.*, p. 98.

VITA § 8.

When Josephus was sent by the leaders in Jerusalem to take charge of affairs in Galilee (66 A.D.), he found the people of Sepphoris in great trouble. Because of their friendly attitude toward the Romans and their league with Cestius Gallus, legate of Syria, the Galileans had resolved to plunder them. Josephus quieted the disturbance, and allowed the people of Sepphoris to communicate with their kindred who were hostages of Cestius Gallus[3]. The latter was at this time in Dor, having evidently come down from Antioch to quell the rebellion of the Jews (*Vita* § 8):

ἀλλὰ τούτους μὲν ἐγὼ παντὸς ἀπήλλαξα τοῦ φόβου πείσας ὑπὲρ αὐτῶν τὰ πλήθη καὶ ἐπιτρέψας ὅσα καὶ θέλουσι διαπέμπεσθαι διὰ τοὺς ἐν Δώροις οἰκείους ὁμηρεύοντας Κεστίῳ. τὰ δὲ Δῶρα πόλις ἐστὶν τῆς Φοινίκης.

"But I delivered them out of all fear, and pacified the multitude in their behalf, and permitted them to send over whatever they wished, for their own relatives were hostages with Cestius at Dor. But Dor is a city of Phoenicia."

Whether Dor was perhaps at this time used by Cestius Gallus as a base of operations is not clear. In view of the fact that Caesarea, a few miles south of Dor, was used by the procurator of Judea as his capital city, it seems rather remarkable that the hostages were not sent there. It may be that the attack of the Jews upon

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[1] See discussion of Eshmunazar inscription above.

[2] Müller, *Geog. Graeci Minores*, I, 79.

[3] But cp. *Vita* § 67, where Josephus storms this city when the inhabitants send to Cestius Gallus for aid.

Caesarea to avenge the slaughter of their countrymen there[1] had rendered it unsafe; and that Dor, lying farther to the north, with pronounced anti-Jewish proclivities[2] and not so easily accessible from Jewish territory, furnished temporarily safer shelter[3]. Dor is here once more reckoned as part of Phoenicia[4].

JOSEPHUS IN STEPHAN OF BYZANTIUM.

After referring to Hecataeus[5] as his authority for the statement that Dor was anciently called Δῶρος but more recently called Δῶρα, Stephan of Byzantium[6] proceeds to cite Josephus, who illustrates both usages:

καὶ οὗτως Ἰώσηπος αὐτὴν καλεῖ ἐν ε τῆς Ἰουδαϊκῆς ἱστορίας "ἀπὸ μὲν Ἰορδάνου μέχρι Δώρων πόλεως." καὶ πάλιν "Ἀζώτῳ καὶ Δώροις ὁριζόμενοι." καὶ ἐν ς "εἶναι τι γύναιον ἐν πόλει Δώρῳ." καὶ πάλιν "ὅτε ἤνεγκεν εἰς τὴν Δῶρον."

"And thus does Josephus refer to it in Book 5 of his Jewish History: 'From the Jordan to the city Dora.' And again: 'Bounded by Azotus and Dora.' And in Book 6: 'That there was a certain (little) woman in the city Doros.' And again: 'When he brought into Doros.'"

The first quotation given by Stephan above is from Ant. V, 1:22, where Josephus relates that the allotment of the half-tribe of Manasseh extended from the Jordan to the city Dor, with its breadth at Bethshan (Scythopolis). It has been shown above[7] that the whole matter of the original territories of the various tribes is so confused in the various Biblical accounts that nothing can be definitely determined concerning it. Probably the borders were not fixed in early times; certainly not at the time when the tribes were gradually taking possession of the land. Josephus' statement here is, consequently, of little value.

The second quotation above is likewise from Ant. V, 1:22, and describes the limits of the territory of the Danites. This account also is of no particular historical value, especially in view of the fact that we see the Danites changing their location in the narrative contained in the Book of Judges. Both these quotations from Ant. V, 1:22 serve to illustrate the use of the plural form Δῶρα, which Stephan has just referred to (in the preceding quotation from Hecataeus) as the later form of Dor's name.

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[1] *B.J.* II, 18:1, 2.

[2] See *Ant.* XIX, 6:3, 4 above.

[3] It is always possible that Josephus' details are not accurate, although he ought to be well-informed in the present instance.

[4] See *Contra Ap.* II, 9 above.

[5] See p. 62.

[6] Ed. Meineke, 1849, p. 254.

[7] See p. 52.

The third and fourth quotations from Josephus above are found in Ant. VI, 14:2. The passage deals with the visit of Saul to the witch of Endor, and has nothing whatever to do with Dor. The name should be read (with Naber) Ἔνδωρος[1]. These last two citations (i. e. from *Ant.* VI, 14:2) differ somewhat from our present text. The former reads[2] εἶναι τι γύναιον τοιοῦτον ἐν πόλει Δώρῳ. Here τοιοῦτον has dropped out in some way. In the latter citation, the texts of Naber and Niese read: ἧκεν εἰς τὴν Δῶρον. The variations in Stephan may be due to his carelessness, or more probably to a different reading in the text he had before him. The fact that the MSS. differ in the word preceding ἧκεν (Naber writing ὄντας and Niese ἄνδρας) shows that text-corruption was present here. Stephan apparently has an inferior reading. These last two quotations serve to illustrate for Stephan the use of the form Δῶρος.

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[1] In his critical notes on the passage (vol. II, p. VIII) Naber remarks: "Steph. Byz. urbs appellatur Δῶρος et consentiunt R O; error est ex duarum urbium confusione." Niese (vol. 2, p. 63) retains the reading Δῶρος.

[2] Naber and Niese.

DOR IN THE TALMUD.

Once only is Dor mentioned in the Talmud. It occurs in a list of frontiers of Israel, dating probably from the time of John Hyrcanus (135–105 B. C.) and Alexander Jannaeus (104–78 B. C.)[1]. Neubauer[2] gives the various readings of the name (which occurs between Caesarea and Akko) as follows:

(a) Tal de Jér., Schebiith VI:1: דרור.
(b) Tosiftha, Schebiith, Ch. 3: ידור.
(c) Siphré, sect. Ekeb, à la fin: דור.
(d) Yalkout, sect. Ekeb, § 674: דירו.

The variations in the form of the name indicate that the texts here have become quite corrupt.

In the Jerusalem Talmud, ושינא precedes דרור. This Hildesheimer[3] reads with Dor and translates "die Klippe, die Höhe von Dor." Neubauer[4], on the contrary, maintains that שינא should be connected, as in the other redactions, with the preceding שר or שד and that the word should be read שרשינא (or שדשינא). In order that we may have the various readings of the preceding town (i. e., Caesarea) before us, I again quote from Neubauer's table opposite p. 11, No. 2:

(a) Tal. de Jér., Schebiith, VI:1: חימת מגדל שיד ושינא.
(b) Tos., Schebiith, Ch. 3: וחומר מגדל שרשונה (ושורא דקיסרא).
(c) Siphré, sect. Ekeb., à la fin: חומת מדבר שרשך.
(d) Yalkout, sect. Ekeb., § 674: חומת מגדל שרשן.

Here, too, there is evidently such great confusion in the readings, that absolute certainty as to the original text can hardly be reached.

Neubauer connects his שרשינא with the old name of Caesarea, Στράτωνος πύργος. This in turn he derives (with Renan) from the Phoenician עבד עשתרת.[5] But שרשינא seems very unlike both the Phoenician and its derived Greek form. We cannot, therefore, accept his explanation as the correct one.

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[1] Hildesheimer, *Beiträge z. Geog. Pal.*, p. 10.

[2] *La Géographie du Talmud*, No. 3 on table opp. p. 11.

[3] *Beiträge*, p. 10.

[4] *La Géographie*, pp. 11, 15.

[5] Buhl (*Géog.*, p. 211) finds in the Greek name an original Astartyaton.

Hildesheimer[1] translates מגדל שיד of the Jerusalem Talmud as "Devils-Tower"[2], explaining it as a nickname for a town called after a worshipper of Astarte. Such a substitution of "devil" for the name of a heathen deity is quite in accord with Jewish usage, and may well be the true way of accounting for שיד here[3].

In connecting שינא with דרור (which he reads as דדור) and making the phrase equivalent to נָפַת דּוֹר, however, Hildesheimer probably errs. All the redactions except the Jerusalem Talmud connect these letters with the foregoing, and their evidence is worth something. It is true that שִׁינָא, שֵׁן may be translated "die Klippe, die Höhe"[4]. But the word should probably be read with the foregoing, "wall of Devils-Tower"[5]. Because of the corrupt text some copyist seems to have made a mistake here in repeating שיד (or שידא); this in turn became שינא by the change of a single letter, ד to נ (cp. the confusion in the other three redactions). This שינא was later probably connected with the word מגדל, "tower" (which may have had some resemblance to a tooth), and allowed to stand. We find the word שִׁינוּתָא (also שׁוּנִיתָא), which likewise may be translated "Klippe" (notice its resemblance to שִׁינא), used elsewhere in connection with Caesarea. Levy[6] quotes the phrase בשינותא דקיסרין "on the cliff of Caesarea" from Num. r. sect. 18, 236 d[7]. The explanatory gloss, ושורא דקיסרא ("Rock, or Cliff, of Caesarea"), in the second section from Tosiftha quoted above illustrates how a similar gloss ושינא ("Cliff") may have been allowed to stand in the Jerusalem Talmud. This reference to Dor as one of the border cities of Israel does not mean that the city was itself included within the nation. The territory of the nation extended simply *to* Dor or its environs.

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[1] P. 4; cp. G.A.S., in *Enc. Bib.* I, p. 617, s.v. Caesarea, § 1.

[2] I. e., שֵׁד, שֵׁידָא, "demon."

[3] Caesarea is called in *Midrash Shir ha-Shirim* I, 5, a "city of abomination and blasphemy." (Neubauer, p. 96.)

[4] Levy, IV, 582-3; originally the word means "tooth," then a tooth-shaped rock or "cliff." So also Jastrow, *Tal. Dict.* II, p. 1603.

[5] Jastrow (II, p. 1603) however accepts Hildesheimer's arrangement and translation.

[6] IV, p. 547.

[7] Cp. also Levy, IV, p. 522.

THE COINS OF DOR.

The issuing of coins at Dor[1] does not seem to have begun until after the "liberation"[2] of the city by Pompey in 64–63 B. C. It is from this date that the city dates its era[3]. That the attribution to Dor of a coin issued by Trypho (who was imprisoned there 139–8 B. C.) was erroneous, has been demonstrated by Babelon[4]. On the basis of a duplicate of this coin and a more careful reading, he has shown that it should be read LΑ[5] ΔΣΚ, instead of ΔΩΡ.ΙΕ.Κ.Α.[6].

The form of the ethnic on the coins is either ΔΩΡΙΤΩΝ or ΔΩΡΕΙΤΩΝ[7]; one coin, owing to a dittography, has ΔΩΡΙΡΙΤΩΝ. The other forms of the name which have been recorded are the result of errors of reading or of transcription[8]. Under Trajan, Hadrian and Antoninus Pius we find the title ΔΩΡιτῶν ΙΕΡὰ ΑϹΥΛος ΑΥΤΟΝομος ΝΑΥΑΡΧΙϹ or merely ΔΩΡΑ ΙΕΡΑ[9]. With these highsounding titles certain privileges were bound up. The title ἱερὰ καὶ ἄσυλος in the Greek and Roman periods extended to whole cities the privilege of asylum which was originally confined to sanctuaries[1]. The significance of the term αὐτόνομος varies slightly at different periods. It is not the same as ἐλεύθερος. The "free" towns were almost entirely independent of Rome, while the "autonomous" cities were not far removed in organization from those directly subject to the Romans. The "autonomous" cities were required to pay taxes and to furnish auxiliary troops upon demand; while in the subject cities direct levies of troops were made by the Roman officials. The statement in Josephus (*Ant.* XIV, 4:4; cp. *B.J.* I, 7:7) that Pompey had made Dor and other cities ἐλευθέρας implies nothing as to their relations toward Rome[2]; the statement simply indicates that these cities were freed from Jewish domination[3]. The title ναυαρχίς was conferred upon Sidon and Tripolis as well as upon Dor, doubtless because of their convenience as naval stations and because of their importance as the chief ports in their respective districts[4]. It would appear from this title that Dor had better harbor facilities in the second century of our era than the remains at present visible would indicate[5].

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[1] Hill, *Cat'g. of Greek Coins of Phoenicia*, pp. LXXIV ff., 113–117; Babelon, *Les Perses Achéménides*, pp. CLXIX f., 205–7; de Saulcy, *Terre Sainte*, pp. 142–148; Head, *Historia Numorum*, p. 792.

[2] Josephus, *Ant.* XIV, 4:4; *B.J.* I. 7:7; see p. 74 above.

[3] Hill, p. LXXIV; Head, p. 792; Babelon, p. CLXX; Ideler, *Handbuch der Chronologie*, I, p. 459; de Saulcy, pp. 143 f., 405; Eckhel, *Doctr. Num. Vet.* III, pp. 362 ff.; Schür., *G.J.V.* II, p. 140. Kubitschek (*Archäologisch-epigraphische Mitteilungen aus Österreich-Ungarn*, XIII, 1890, p. 209) places the era between 63 and 59 B. C., and denies that Dor dated from Pompey. In his article "Aera" in Pauly-Wissowa's *Real-Enz.* I, p. 649 f., however, Kubitschek is undecided as to the date.—On the basis of a doubtful reading, de Saulcy (p. 144) supposes that a single coin of Vespasian is dated according to the era of Gabinius. But in this he works on the mistaken presumption that Gabinius restored Dor (see above, p. 76). In like manner Kubitschek (*Archäologisch-epigraphische Mitteilungen aus Österreich-Ungarn*, XIII, 1890, p. 209) and Hill (p. LXXV) have failed to perceive that Adora in Idumea is the city meant in the passages Jos., *Ant.* XIV, 5:3; *B.J.* I, 8:4.

[4] *Rois de Syrie* (1890), pp. CXXXIX f., 137.

[5] The L before the date has usually been supposed to be an Egyptian character. It is more probably a fragmentary and specialized form of the E of ΕΤΟΥΣ, (see Head, p. LXXXVII).

[6] Hill, *l. c.*

[7] These are, of course, equivalent forms.

[8] Babelon, *Les Perses Achém.*, p. CLXX; Hill, p. LXXV.

[9] Hill, *l. c.*; Head, p. 792.

According to the tradition preserved by Claudius Iolaus[6] the eponymous founder of Dor was Doros, the son of Poseidon. It is probable that this hero is intended by the Poseidon-like deity represented on some of the coins[7]. On the other hand, this may easily be intended to represent Zeus[8]. Another type that frequently occurs is the turret-crowned Tyche of the city. Astarte on many of the coins holds a naval standard; this has also been called a mast with a sail or a vexillum[1].

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[1] Schür., *G.J.V.* II, p. 105; Moore in *Enc. Bib.* I, pp. 377 f., s.v. Asylum; Head, p. LXXX.

[2] Schürer, *G.J.V.* II, pp. 104 f.

[3] On the whole question of the significance of the term αὐτόνομος, see Schür. II, pp. 104 ff.; Mommsen, *Handbuch der Röm. Alterthümer*, V. III, pt. I, 658 f. (Röm. Staatsrecht); Head, p. LXXX.

[4] Head, p. LXXX; Babelon, *Les Perses Achém.*, p. CLXX.

[5] Cp. the tradition related by Claudius Iolaus (see below p. 94) that Dor was provided with good harborage. . . . . At Tyre and Sidon, similarly, the ancient harbors seem to have been larger and better protected than the ones built later. See Baedeker (2) pp. 272 ff., 278 ff.

[6] *Steph. Byz.* s.v. Δῶρος; see pp. 94 ff.

[7] Hill, p. LXXIV; Head, p. 792.

[8] Babelon, *Les Perses Achém.*, pp. 205-7; Schür., *G.J.V.* II, p. 35.

The most complete and accurate treatment of the coins of Dor is that by G. F. Hill, *Catalogue of the Greek coins of Phoenicia*, pp. 113-118. Some forty-three coins from Dor are listed, all made of bronze. Two are dated in the year 1 (LA) i.e., 64-63 B.C. The attribution of these two coins to Dor is not absolutely certain, inasmuch as the name is abbreviated to the doubtful form ΔΩ. The fact that the coin next in date comes from a period one hundred and twenty-eight years later (64-5 A.D.) increases our suspicion regarding the correctness of the attribution of these coins to Dor. On the obverse of these two coins appears the head of Tyche, veiled and turreted. The reverse of the one presents Tyche standing, holding a cornucopia in the left hand, with the right hand resting on a tiller. The reverse of the other coin pictures an ear of barley upright.

From the imperial period coins are listed both with and without the heads of emperors. Those without the emperor's likeness date from 64-5 to 75-6 A.D. A frequent type of this class represents on the obverse the head of Doros bearded and laureate; on the reverse occurs the figure of Astarte with turreted crown, long chiton and peplos, moving left, head right, holding a standard and cornucopia in the right and left hands respectively. Another type of coin has on the obverse a bust of Tyche, turreted and veiled; on the reverse appears Astarte standing with standard and cornucopia. A variation of this type substitutes a galley for Astarte on the reverse side. Again we find a coin with Doros obverse and Tyche reverse.

The coins with heads of emperors date from the reign of Vespasian (69-79 A.D.) to that of Elagabalus (218-222 A.D.)[2]. Under Vespasian two coins are described, with the emperor's head obverse and a standing Tyche on the reverse. Three coins of Titus are given, similar to the one just mentioned, except that the head of Titus supplants that of Vespasian. Seven coins are listed under Trajan, all with his head laureate, drapery on neck and a star, on the obverse; the reverse differs, having three times the head of

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[1] Hill, *l.c.*

[2] De Saulcy's description of coins of Geta and of Aquilia Severa await confirmation (Hill, p. LXXV).

Doros, once the bust of the Tyche of the city and three times a standing Astarte. The obverse and reverse of the three coins of Hadrian portray respectively the bust of Hadrian and the head of Doros. Similarly the three coins of Antoninus Pius have the bust of the emperor and the head of Doros. The one coin of Elagabalus pictures on the reverse a temple with six columns, with a female figure within[1].

Further finds of coins in the future will doubtless add new specimens to our collections, and will perhaps carry the history of the town under Rome somewhat farther.

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[1] This may be the representation of some temple within the city of Dor.

FROM CLAUDIUS IOLAUS TO HIEROCLES.

CLAUDIUS IOLAUS.

Claudius Iolaus, whose name would seem to indicate that he was of Roman origin[1], is quoted by Stephan of Byzantium under Δῶρος. He wrote after the rebuilding of Caesarea[2] by Herod and probably belongs to the first century A. D.[3]. His work on Phoenicia seems to have been a collection of historical and pseudo-historical notices. Of Dor he writes[4]:

καὶ Κλαύδιος Ἰούλιος *ἐν γ΄* Φοινικικῶν “*μετὰ* Καισάρειαν Δώρα *κεῖται βραχεῖα πολίχνη*, Φοινίκων *αὐτὴν οἰκούντων, οἳ διὰ τὸ ὑπόπετρον τῶν τε αἰγιαλῶν καὶ τὸ πορφύρας γόνιμον συνέλθοντες, καλιὰς αὐτοὺς ᾠκοδομήσαντο καὶ περιβαλόμενοι χάρακας, ὡς ὑπήκουεν αὐτοῖς τὰ τῆς ἐργασίας, τεμνόμενοι τὰς πέτρας, διὰ τῶν ἐξαιρουμένων λίθων τὰ τείχη κατεβάλοντο, καὶ τὴν εὔορμον χηλὴν ὅπως [οἷόν] τε ἀσφαλῶς ἔθεντο, ἐπώνυμον αὐτὴν τῇ πατριῴ γλώσσῃ* Δῶρ *καλοῦντες. οἱ δ'* Ἕλληνες, *χάριν τοῦ τῆς φωνῆς εὐπροφόρου, καλεῖν ἀρκοῦντα* (l. *ἆρκοῦνται*) Δῶρα *τὴν πόλιν. καί τινες ἱστοροῦσι* Δῶρον *τὸν* Ποσειδῶνος *οἰκιστὴν αὐτῆς γεγονέναι.*”

“‘And Claudius Iolaus in (Book) 3 of the Phoenikika: ‘Next to Caesarea lies Dor, a very small town inhabited by Phoenicians. These settled here because of the somewhat rocky nature of the beaches and the abundance of the purple-fish. At first they built themselves cabins, about which they placed stakes. When their business prospered, however, they split the rocks, and with the stones thus set free they built city-walls, and made a harbor with good and safe anchorage. They called the place in their native tongue Dor. But the Greeks, for the sake of its more pleasing sound, agree to call the city Dora. And some make the statement that Doros, the son of Poseidon, was its founder.’”

It has already been suggested[5] that the derivation of the name from Poseidon's son is simply one of the early legends of the city[6];

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[1] Schwartz in Pauly-Wissowa's *Real-Enz.* III, 2728.

[2] This is indicated by his use of the name Caesarea in the passage quoted below.

[3] Pauly-Wissowa's *Enz.*, *l. c.*; Müller, *Fragm. hist. graec.* IV, 363.

[4] *Steph. Byz.*, ed. Meineke, p. 255, s.v. Δῶρος.

[5] Page 18.

[6] This tradition seems to be the reason for the use of the Poseidon-like head on some of the coins of Dor.

so also the account here of the city's early history. Evidently the town was of no great size in the time of Claudius Iolaus (*βραχεῖα πολίχνη*—cp. Artemidorus[1] "*πολισμάτιον;*" Clem. Recog. IV: 1[2], "breve oppidum;" Pliny[3], "memoria urbium.") The city wall can still be traced in part among the ruins[4]. That the purple-yielding murex constituted one of the sources of Dor's wealth is easily possible, for the coast in this neighborhood contains quantities of purple-fish[5]. The reference to Dor by Claudius Iolaus is interesting for the light it throws upon legends connected with the city, and because of the evidence it affords that early writers could even conceive of it as being of Greek origin. Probably its spirit and culture became in the later centuries B.C. essentially Greek in tone.

PLINY.

Pliny[6] speaks of Dor as though it were not in existence at the time[7] he wrote: "Hinc redeundum est ad oram, atque Phoenicen. Fuit oppidum Crocodilon, est flumen: memoria urbium, Doron, Sycaminon." The Crocodile River is located south of Dor[8]. But apart from a reference in Strabo[9] we have no further record of a city of that name. Sycaminon is in the Onomasticon[10] identified with Haifa, although the Talmud seems to regard the two as distinct the one from the other. Perhaps the two names were applied to the city proper and its harbor[11]. It is also possible that Sycaminon ought to be identified with the ruins Tell es-Semak, two miles distant from Haifa el-'Atīḳah[12].

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[1] Page 63.

[2] Page 98.

[3] Below.

[4] Page 10.

[5] *Enc. Bib.* s.v. Dor; Ritter, *Die Erdkunde,* XVI, p. 610. Cp. Deut. 33:18, 19, where Issachar is to "suck the abundance of the seas, and the hidden treasure of the sands." This may refer to the purple industry.

[6] *Hist. Nat.*, V, 17, ed. Gabraiels Brotier, with notes by Hardouin and Cigalino.

[7] C. 77 A.D.

[8] See p. 7.

[9] XVI, 2, §27.

[10] S.v. Hepha.

[11] Buhl, *Geog. des alten Pal.*, p. 214.

[12] *S.W.P. Mem.*, I, 289.—Sycaminon has also been located at 'Athlīt.

If Pliny was rightly informed by his sources, the phrase "memoria urbium" would seem to indicate that Dor had been for a time almost or quite in ruins[1]. The testimony of the coins[2], however, proves that Dor was certainly issuing coins from 64 A.D. down to the time of Elagabalus. Either Pliny was uninformed concerning the condition of Dor in his own time, or else he is indulging in hyperbole or loose and inexact inference.

Strabo[3] in the passage mentioned above (i.e., XVI, 2, § 27) has some interesting parallels to the statements of Pliny. He says:

μετὰ δὲ τὴν Ἄκην Στράτωνος πύργος, πρόσορμον ἔχων. μεταξὺ δὲ ὅ τε Κάρμηλος τὸ ὄρος καὶ πολιχνίων ὀνόματα, πλέον δ᾽ οὐδέν, Συκαμίνων πόλις, Βουκόλων καὶ Κροκοδείλων πόλις καὶ ἄλλα τοιαῦτα. εἶτα δρυμὸς μέγας τις.

"And after Ake is Strato's Tower, which has a harbor. And between these is Mount Carmel besides the names of little towns (and nothing more), viz., the city Sycaminoi, the cities Boukoloi and Crocodeiloi, and others of the same sort. Then follows a certain great forest."

It is to be noticed that Strabo here omits Dor from his enumeration of *πολιχνίων ὀνόματα*. It may be that Dor was overshadowed by its greater neighbor Caesarea. Like Pliny, Strabo mentions the city Sycaminon as no longer in existence. If his location of this town is correct, it could hardly be Haifa, but more easily the ruin Tell es-Semak already mentioned. A city Boukoloi (=herdsmen) in this region is not elsewhere referred to. The fact that this passage in Strabo is the only other mention of a city Crocodile (as well as the reference to Sycaminon and the general description of the coast[4]), may point to a dependence, either direct or through the mediation of other writers, of Pliny upon Strabo here[5]. The testimony of these writers is worth this much at least: It indicates that at a time probably near the beginning of our era the coast cities in this district suffered a temporary eclipse.

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[1] Cp. Sidon, which in 350 B. C. was captured and reduced to ashes by Artaxerxes Ochus. By the time of the conquests of Alexander the Great it was again a city of some importance.

[2] See above, p. 92.

[3] Date 63 B. C.–24 A. D.

[4] Notice that, while Pliny follows the coast from S. to N., Strabo enumerates the cities in the opposite direction. Boukoloi thus stands in the place of Dor.

[5] This statement, in view of the rather scanty evidence, is made very tentatively.

PTOLEMY.

Claudius Ptolemaus, Alexandrian geographer and astronomer, includes Dor within the Φοινίκης θέσις, and reckons its position as follows[1]:

Δωρα	$\bar{\xi}$ς	ά(=½)	λβ	γό
"Dor	66°	30′	32°	40′"

This testimony would seem to indicate that Dor was still in existence about the middle of the second century A. D.

CHARAX PERGAMENUS.

Stephan of Byzantium[2] quotes from Book 11 of Charax to the effect that Trypho, when besieged at Dor by Antiochus, fled εἰς Πτολεμαΐδα, τὴν Ἄκην λεγομένην, "to Ptolemais, called Ake"[3]. Müller[4] places Charax under the emperors Hadrian, Antoninus Pius and Marcus Aurelius (i. e., 117–180 A. D.). Charax gives us, however, no information concerning Dor in his own period.

PAUSANIAS.

In the course of his discussion of the ethnic of Dor, Stephan of Byzantium[5] quotes Pausanius as authority for the form Δωριεῖς (from Δωριεύς), as follows:

Παυσανίας δὲ ἐν τῇ τῆς πατρίδος αὐτοῦ κτίσει Δωριεῖς αὐτοὺς καλεῖ τῇδε γράφων "Τύριοι Ἀσκαλωνῖται Δωριεῖς Ῥαφανεῶται," ὥστε παρὰ τὴν Δῶρον τὸ Δώριον εἶναι, οὗ ἂν εἴη τὸ Δωριεύς, ὡς τοῦ Χήσιον τὸ Χησιεύς.

"And Pausanias in his work on his native land calls them Dorieis, writing thus: 'Tyrians, Askalonites, Dorieis, Rhaphanites;' so that beside the feminine Doros there is a neuter form Dorion, whose ethnic would be Dorieus, just as the ethnic of Chesion is Chesieus."

Pausanias was a Greek traveller and author who lived in the latter half of the second Christian century[6]. Examination of his

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[1] *Geog.* V, 15:5; ed. Nobbe. Ptolemy flourished from 127–151 A. D.

[2] S.v. Δῶρος; also in Müller, *Fragm. hist. graec.* III, 644 n. 40.

[3] See above, p. 68.

[4] *L. c.*, p. 636.

[5] S.v. Δῶρος.

[6] Lippincott on the name; preface to Shilleto's translation.

Περιήγησις[1] fails to reveal the quotation Stephan pretends to give. The Tyrians appear elsewhere but Ascalon occurs only as a town name; of the Rhaphanites[2] there is no mention. The Dorieis frequently referred to by Stephan are not the inhabitants of Dor, but the Greek Dorians. It is quite possible that Stephan here quotes from memory, and with results most disastrous to his argument.

THE CLEMENTINE RECOGNITIONS.

In the pseudo-Clementine Recognitions Dor is referred to as a "breve oppidum." This theological "Tendenz-Romance" represents Peter and his party on their way from Caesarea to Tripolis as stopping overnight in an inn at Dor. On the morrow they continue on their way as far as Ptolemais. The Latin translation of Rufinus of Aquileia (d. 410 A.D.) reads as follows[3] (Book IV: 1):

Profecti a Caesarea ut Tripolim pergeremus, apud Doram breve oppidum primam fecimus mansionem, quia nec longe aberat. Et omnes paene qui per sermonem Petri crediderant, divelli ab eo satis aegre habebant, sed pariter incedentes, dum iterum videre, iterum complecti iuvat, iterum conferre sermonem, ad diversorium prevenimus, sequenti vero die venimus Ptolomaidem.

The Recognitions are probably to be dated at the earliest in the first half of the third century A.D.[4]. Their older sources go back at least to the end of the second century A.D. Thus we have here the statement that about the year 200 (later or earlier) Dor was known to the writer of the Clementine Recognitions as a small town.

EUSEBIUS AND JEROME.

Eusebius (c. 275–c. 340) includes Dor in his Onomasticon[5] under the two forms *Δὼρ τοῦ Ναφὰθ* and *Ναφεθδώρ*, as follows: (*O. S.* 250:56)

Δὼρ τοῦ Ναφάθ. αὕτη ἐστὶ τῆς παραλίας Δῶρα ἡ πρὸς Καισαρείαν τῆς Παλαιστίνης. ἣν οὐκ ἔλαβεν ἡ φυλὴ Μανασσῆ, ὅτι μὴ ἀνεῖλεν τοὺς ἐν αὐτῇ ἀλλοφύλους. (*Ios.* 11:2; 17:11, 12.)

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[1] Ed. Hitzig & Bluemmer; trans. by Frazer.

[2] Inasmuch as the other cities quoted are on the coast, Raphia is probably here meant, not Raphana of the Decapolis.

[3] Ed. Gersdorf, pp. 114 f.

[4] Uhlhorn in Hauck-Herzog, *Real-Enckl.*, art. Clementinen; T. Smith in *Ante-Nicene Fathers*, VIII, p. 74.

[5] *Onomastica Sacra*, ed. Lagarde (2) 1887.

"Dor of Naphath: This is Dor of the sea-coast, adjacent to Caesarea Palestina; which the tribe of Manasseh did not take, because they failed to destroy the Gentiles in it."

(*O. S.* 283:3) Ναφεθδώρ. Σ. ἐν τῇ παραλίᾳ Δῶρα. αὗτη ἐστὶν ἀπὸ θ σημείων Καισαρείας. (*Ios.* 11:2.)

"Napheth-dor: Symmachus (translates): 'Dor on the sea-coast'. This is nine miles distant from Caesarea."

Under the name Μαγδιήλ[1] Eusebius (and after him Jerome) refers to the town under its shorter name; i. e., taking it as a neuter plural form, he gives the genitive as Δώρων. From these references to the town, it would appear that Dor was in existence at the time Eusebius wrote[2], i. e., in the early part of the fourth century.

Between this time and the translation of the Onomasticon by Jerome[3] (c. 390)[4], however, Dor seems to have fallen temporarily into ruins[5]. In his free rendering of the passages of Eusebius quoted above, Jerome speaks of Dor as deserted (*O.S.* 115:22): Dor Nafeth, quod Symmachus transtulit Dor maritima (*Ios.* 11:2) haec est Dora in nono miliario Caesareae Palaestinae pergentibus Tyrum, *nunc deserta.* quae cum cecidisset in sortem tribus Manasse, eam possidere non potuit, quia habitatores in illa pristini permanserunt (*Ios.* 17:11, 12). (*O.S.* 142:13): Nefeddor, quod Symmachus interpretatur maritimam (*Ios.* 11:2). Dor autem est oppidum *iam desertum* in nono miliario Caesareae pergentibus Ptolomaidem.

In his Sanctae Paulae peregrinatio[6], Jerome repeats his testimony concerning Dor, as follows: . . . . et per campos Mageddo, Josiae necis conscios intravit terram Philisthiim. Mirata *ruinas Dor*, u rb quondam potentissimae. Paula was a Roman matron who left Rome in 382 and lived in Bethlehem from 384 until her death in 404. On the basis of the statements of Eusebius and Jerome we are probably justified in inferring that some calamity depopulated Dor sometime after the middle of the fourth century. Later, however, the city must have been reëstablished, for we read of bishops of Dor in the following centuries.

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[1] *Onomastica Sacra*, ed. Lagarde (2) 1887, 280:40.

[2] See on the Bishops of Dor, pp. 102 ff.

[3] *Hieronymi de situ et nominibus locorum hebraicorum liber.*

[4] Hauck-Herzog, *Encyk.*, s.v. Hieronymus.

[5] The fact that Dor was the seat of a bishopric at a later period indicates that it was restored. It would appear from the conflicting accounts of Dor in the early Christian centuries that the town passed through alternate periods of prosperity and decline.

[6] =*epist. 108 ad. Eustochium* c.VIII in opp. ed. Vallarsii et Maffaeii I, 696. Also in Tobler et Molinier, *Itinera Hierosolymitana et Descriptiones Terrae Sanctae*, I, p. 31.

TABULA PEUTINGERIANA.

Dor appears on the Tabula Peutingeriana[1] under the form Thora[2]. The distance from Thora to Cesaria is indicated as VIII miles, from Thora to Ptolomaide as XX miles. The former of these distances is approximately correct, the latter not large enough by several miles[3].

This interesting map of military roads of the western Roman Empire is named after the Augsburg recorder, Konrad Peutinger, who obtained it in 1508 from its discoverer. This particular copy was made in the 13th century; the original in its present form goes back probably to the fourth century A.D.[4].

STEPHAN OF BYZANTIUM.

Stephan of Byzantium[5], the author of a geographical dictionary called "Ethnica," is supposed to have lived in the fifth century[6]. Included in the abridgement of this work now extant is a chapter on Δῶρος, πόλις Φοινίκης ("Dor, a city of Phoenicia"). The chapter mainly consists (in addition to a discussion of the ethnic of the town's name) of quotations from Greek writers. These quotations have been fully treated above[7], so that there is no need for their further discussion here.

While Stephan has preserved in his quotations from the authors he cites valuable bits of information regarding Dor, he leaves us in the dark concerning the Dor of his own day. Like most ancient writers he is not consistently critical in his methods, and his testimony must, therefore, be carefully questioned at most points. His quotations are not always strictly accurate[1].

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[1] Ed. Desjardins (1868), segment IX.

[2] See above, p. 17.

[3] Guérin, *Sam.* 2:314.

[4] Teuffel-Schwabe, *Hist. of Rom. Lit.* (Eng. Trans. 1891-2), II, § 412:6; *Enc. Brit.* s.v. Konrad Peutinger.

[5] Ed. Meineke, 1849, pp. 254 ff.

[6] Lippincott's *Pron. & Biog. Dict.* on the name.

[7] Hecataeus, see p. 62; Josephus, pp. 66 ff.; Claudius Iolaus, pp. 94 f.; Artemidorus, p. 63; Apollodorus, p. 63; Alexander Ephesius, p. 64; Charax, p. 97; Pausanias, pp. 97 f.; Craterus, pp. 62 f.

HIEROCLES.

Hierocles, a grammarian, who is supposed to have lived in the sixth century A. D.[2], wrote in Greek a "Handbook for Travellers" (Συνέκδημος), which lists the towns and provinces under the Eastern emperor at Constantinople. Dor is included among the cities in the first of the three divisions of the province of Palestine, as follows[3]:

Ἐπαρχία Παλαιστίνης, ὑπὸ κονσουλάριον, πόλεις κβ΄:
Καισάρεια μητρόπολις
Δῶρα
Ἀντιπατρίς
Διόσπολις
Ἄζωτος παράλιος
Ἄζωτος μεσόγειος, κτλ.

"The province of Palestine, under a proconsul, 22 cities:
Caesarea, metropolis
Dor
Antipatris
Diospolis
Azotus on the coast
Azotus inland, etc., etc."

In the fifth century the three-fold partition of Palestine (which is here used by Hierocles) into Palestina Prima (or Maritima), Palestina Secunda, and Palestina Tertia (or Salutaris) began to prevail[4]. These divisions were at once political and ecclesiastical, and continued during the time of the Crusades. The first division included the coast region as far as Carmel, with Caesarea as its metropolis or archbishop's see. Dor is, as here, prevailingly named immediately after adjacent Caesarea. These early lists of towns are repeatedly copied by later writers, sometimes with modifications, but apparently without investigation into the question of the contemporary state of the cities[5].

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[1] See on Josephus (pp. 86 f.), and on Pausanias (p. 97 f.).

[2] Lippincott on the name; Burckhardt, *Hieroclis Synecdemus*, p. XIV (before 535 A. D.).

[3] *Hierocles Grammaticus*, ed. Parthey, p. 43; ed. Burckhardt, p. 41.

[4] Socin in *Enc. Bib.*, 3548 f., s.v. Palestine.

[5] See on Georgius Cyprius below.

THE BISHOPS OF ḌOR.

FIDUS.

Lequien[1] has collected records of five early bishops of Dor. The first of these is Fidus, who belongs in the last quarter of the fifth century. Apparently Dor had been rebuilt since the time of Jerome, when it was in ruins[2]. The references to Fidus, Lequien quotes from the "Vita sancti Euthymii abbatis, apud Cotelerium to. 2 monum. eccl. Graec." This biography of St. Euthymius was written by the monk Cyrillus of Scythopolis[3]. Lequien's quotations of the passages from the life of Euthymius relative to Fidus, and his comments on these quotations follow.

Nam n. 60. p. 249. narrat 'Fidum' Fidi Joppensis episcopi nepotem, Anastasium, qui postea Hierosolymitanus evasit Patriarcha iuxta Euthymii prophetiam, comitatum esse ad eundem Euthymium invisendum euntem: "Quum ergo desiderium videndi hominis (Euthymii) in se aleret, Fido Joppes episcopo, & Cosinae Crucum custodi pulchram illam communicat cupiditatem; atque eos assumens, quin etiam Fidum alterum episcopi Fidi nepotem, (erat autem is adhuc aetate iuvenis, & in chorum lectorum cooptatus; qui etiam Cyriaco monacho haec tradidit & narravit:) cum iis proficiscitur ad magnum Euthymium, etc." Id contigit ante Juvenalis Patriarchae Hierosolymitani obitum, cui successit Anastasius modo memoratus anno 458. qui "Statim (ut refertur ibid. num. 96. pag 20) Fidum, qui ad lauram cum ipso accesserat, audieratque praedictiones (Euthymii,) ordinat diaconum, & rursus ad magnum (Euthymium) mittit una cum custode crucis; tum prophetiae significans eventum, tum rogans sibi permitti ad eum pergere, etc." Num. 110. adfuit praesens Euthymii funeribus an. 473, die 20. Januar, defuncti. "Fama celeriter (mortis Euthymii) per omnem finitimam regionem sparsa," inquit Cyrillus ibid. pag. 294, "monachorum & laicorum multitudo vix numerabilis congregata est; quin etiam Anastasius Hierosolymorum Patriarcha, assumto secum clericorum simul & militum examine, accessit.

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[1] *Oriens Christianus* (Paris 1740) III, pp. 574-9.

[2] See above, p. 99.

[3] *Oriens Christ.* III, p. 575.

Aderat quoque Chrysippus, unaque Gabrielius, sed & diaconus Fidus . . . . cunctos autem in stuporem adducebat continuatio miraculorum." Et pag. seq. 295. "Fidum autem diaconum (Patriarcha) in laura relinquens, ei aedificandi (sepulcri Euthymii) committit negotium. . . . . quo beatae illae Euthymii reliquiae in apto & convenienti loco deponerentur." Et num. 112. p. 296. "At diaconus Fidus, multa operarum manus collecta magnoque adhibito studio, speluncam quae in principio tenuit quiete agentem Euthymium, aedem pulcherrimam & maximam efficit, etc." Mortuo Anastasio anno Christo 478. Martyrius eius successor, ad "Imperatorem Zenonem & Acacium Constantinopolitanum episcopum scribit de Aposchistis," ibid num. 113 pag. 298 . . . . "atque Fido diacono litteris traditis, non pauca viro ore etiam dicenda mandat." Verum quum navigium ascendisset Fidus, certo naufragio ereptus fuit ab Euthymio quem invocaverat, quiqui illi apparens, dixit, n. 114 p. 299. "Noli timere: Ego sum Euthymius servus Dei: scias autem tibi bonum non esse hoc iter conspectu Dei; nullam enim afferet utilitatem matri ecclesiarum. Quapropter oportet te reverti ad eum qui te misit, eique meo nomine denunciare, ne sit ullatenus sollicitus de disiunctione Aposchistarum: non enim diu abhinc, sed sub eius Pontificatu erit unio, & omnes Hierosolymitani fient unus grex atque sub uno Pastore." (Veritatem visionis firmavit vaticinii eventus, de quo vide supra col 176.) "Te autem oportet venire ad meam lauram; & fratrum quidem cellas (dispersas nempe) diruere ab ipsis fundamentis, coenobium vero readificare illic, ubi meum aedificasti caemeterium. Locum enim Deo placet non lauram esse, sed potius caenobium etc." Et num. 116. pag. 301. "Transiens postea ad Patriarcham, ei omnia renunciavit Fidus. Et ille vehementer admiratus narrationem opinione maiorem; profecto, inquit, Dei propheta est magnus Euthymius . . . . quae enim ad lauram spectant, ea coram nobis omnibus praedixit, iam in Christo per mortem consummandus. His dictis, ipse etiam Fido committit coenobii aedificationem, conceditque ei ut illo proficiscatur, simul professos se quoque omnibus viribus apus una esse aggressurum." Et num. 117. "Fidus itaque, accepta magna manu ministrorum & structorum, cum uno ex mechanicis seu architectis, descendit in lauram: quumque aedificasset coenobium, septoque & muro in orbem esset complexus, vetus quidem templum attribuit fratribus ad caenaculum, aliud autem templum aedificat superius. Intra coenobium vero splendide excitat turrim velut quoddam totius eremi propugnaculum, & in medio caemeterio collocat etc." Et n. 119. "Quum itaque huiusmodi totum caenobii aedificium simul & ornamentum non opus habuisset plus quam tribus annis ob multas manus intensumque ministerium, volebant quidem divini illi Patres, cum alio ornatu & artificio dedicationem etiam ecclesiae tribuere; eos autem arcebat rursus aquae penuria: nam in illa solitudine pluit tantum hyeme . . . . Itaque Helias praepositus, & diaconus Fidus significant Longino inferioris monasterii praefecto, & paulo praeposito monasterii Martyrii, ut per iumenta eos adiuvent ad aquam ex Pharis ἀπὸ Φαρῶν transferendam." Num. 120. pag. 504. "Sequenti ergo nocte, paratis iis circa diluculum ad iter, iamque congregatis iumentis, apparet nocte illa beato Heliae magnus Euthymius: Quid hoc sibi vult, rogans, quod hodie iumenta congregetis? Quum is vero respondisset; ut aquam ex Pharis afferamus, eo quod nos nunc omnino defecerit; increpavit ille, dicens: Modicae fidei homines, quanam de causa Deum non precati estis? Num is qui e praerupta petra inobedientem potavit populum, & aquam ex asini maxilla Samsoni aliquando fecit scaturire, non poterit vobis quoque ad usum suppeditare, dummodo cum fide offeratis petitionem? Deinde eis etiam prohibuit iter ad Pharas ἐπὶ Φαρὰς ut minime necessarium. Aqua enim vobis implebuntur, inquit, vel maximae cisternae, ne tribus quidem horis expectatis." Et n. 121. "Excitatus è somno ad visionem beatus Helias, statimque ea Fido & reliquis annunciata, iumenta à proposito solvit ministerio: quum non autem iam transisset, & sol omnem quantam videt terram radiorum illustraret iaculis; nubes alicunde aërem subito complexa caenobio incumbentem, erupit protinus in pluviam, & omnia quidem circumcirca simile adhuc puniebat flagellum siccitatis; ii autem soli qui erant in caenobio, aqua praeter opinionem fruebantur: perinde ac si aliquis pluviam circumscripsisset, rursusque non sineret ulterius progredi. Postquam autem cisternae fuerunt aqua plenae, nec ii amplius indigebant imbribus è caelo, statim nubes dissipata est, & vehemens imbrium procella ad serenitatem iterum redacta fuit." Et num. 122. pag. 305. "Quum vero miraculum brevi totam pervasisset solitudinem, atque ad ipsum etiam archiepiscopum Martyrium iam pervenisset, descendens ille cum multa rerum affluentia ad coenobium, praeclaram agit synaxim & vigiliam cum multis lampadibus & suffitibus καὶ θυμιάμασι; sed & splendidam magnificamque facit dedicationem: Deponem sub altari quasdam partes reliquiarum martyrum Tarochi, Probi & Andronici, septimo

mensis Maii, anno iam duodecimo post Euthymii mortem (proindeque Christi 484). Quum aliquod autem tempus transiisset, diaconus quoque Fidus accipit episcopatum civitatis quae vocatur Dora:" Proindeque ordinatus est Fidus iste, vel sub finem anni 484 vel anno seq. 485. Quid in praesulatu egerit, & quonam obierit anno nos latet. Constat solum exeunte anno 518, eum non fuisse amplius superstitem.

BAROCHIUS.

The second Bishop of Dor of whom we have any record is Barochius[1], who was present at the council of Jerusalem in 518[2]. This council convened under Patriarch John of Jerusalem in order to ratify the decisions of the Council of Constantinople held earlier in the same year under Patriarch John of Constantinople[3]. The two councils were in decided agreement. Among the thirty-three bishops assembled at Jerusalem was Barochius. His name appears with the other signatures attached to the decree of assent issued by the Jerusalem Patriarch[4]: Βαρώχιος ἐπίσκοπος Δώρων ἐῤῥῶσθαι με, καὶ τὰ λοιπά. Barochius[5], episcopus Dororum, valere me, & reliqua. From the first signature to this document (viz., that of the Patriarch John of Jerusalem) we learn that καὶ τὰ λοιπά represents: καὶ τῷ κυρίῳ εὐαρεστεῖν εὔχεσθε δεσπόται ἅγιοι, καὶ θεοφιλέστατοι, καὶ ὁσιώτατοι πατέρες. Latin: & domino beneplacere orate, domini sancti, ac Deo amantissimi & sanctissimi patres.

In the year 518, therefore, Barochius was at the head of the bishopric of Dor. Further information concerning him we have none[6].

JOHN.

A third Bishop of Dor was among those who, in September, 536, were present at a council held in Jerusalem under the Patriarch

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[1] Variant form in the Latin, "Marochius" (Harduin, *Acta Conciliorum* II, p. 1346; Mansi, *Sacrorum Conciliorum nova et amplissima Collectio,* VIII, p. 1073). Guérin (*Sam.* 2:313) writes "Baronius." He also calls him the first Bishop of Dor.

[2] Lequien III, pp. 578 f.

[3] Hefele, *Conciliengeschichte* II, pp. 688 ff.

[4] Mansi VIII, pp. 1073 f., Harduin, II, pp. 1345 f. This decree is recorded in Harduin among the acts of a later Constantinople Council, held in 536 under Mennas (Hefele *l.c.*; Noris, *Annus et Epochae*, p. 457).

[5] See note 1, above.

[6] Lequien, *l.c.*

Peter. Ἰωάννης ἐπίσκοπος Δοάρων ("John, Bishop of Dor") appears among the signers of the decree (directed against Anthimus and other opponents of the Council of Chalcedon), which was promulgated by the Jerusalem council[1]. The fact that at the Constantinople Council held in the same year (May and June 536), John, Bishop of Zoar, was present[2], might seem to indicate that Ζοάρων should be read for Δοάρων. But the reading with Δ is the one here attested[3]; and it is hardly probable that Dor was without representation at the Jerusalem Council[4]. In itself there is nothing improbable in the conclusion that the bishops of Dor and Zoar in the year 536 were both named John.

STEPHAN.

On the eighth of October, 649, Stephan, Bishop of Dor, was introduced to the Constantinople Council of that year, over which Pope Martin presided[5]. From the communication read to this Council by Stephan we learn that this was his third appearance before the Pope at Rome. He had been sent the first time by Sophronius I, Patriarch of Jerusalem (who succeeded Modestus, c. 634[6]) to accuse Sergius of Joppa and other Bishops of monothelitism. Pope Theodore (as we learn from Stephan's letter just mentioned) appointed Stephan his representative in Palestine to convert to orthodoxy or else to depose the heretic bishops appointed by Sergius[7]. Some of these bishops recanted and were duly confirmed in their offices by Pope Martin.

Stephan is introduced[8] by a "Theophylactus notarius" to the Constantinople Council of 649 (Secretarius II) as ὁ ὁσιώτατος ἐπίσκοπος Δώρων πρῶτος ὑπάρχων τῆς ἐν Ἱεροσολύμοις ἱερατικῆς δικαιοδοσίας. "The most reverend Bishop of Dor, who is first of the church council in Jerusalem." In the introduction and conclusion of the letter he reads[1], Stephan refers to himself in almost exactly the same words. Among the signatures under Secretarius I of this same council[2] appears in Latin the name : Stephano Dorensi episc. In the Greek of both Mansi and Harduin, however, the name does not appear.

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[1] Lequien, III, p. 579; Harduin, II, p. 1418.

[2] Lequien, *l. c.*; Harduin, II, p. 1402.

[3] Although the Latin in Harduin reads "Posdonus."

[4] Cp. the Jerusalem Council in 518 just discussed, at which Barochius of Dor was present.

[5] Hefele, *Conciliengeschichte*, III, pp. 216 f.; Noris, *Annus et Epochae*, pp. 457 ff.; Lequien, III, pp. 579 f.

[6] Lequien, *l. c.*

[7] Hefele, III, pp. 209 f.

[8] Mansi X, pp. 891 f.; Harduin, III, pp. 709 ff.

The address of Stephan to the Council[3] proves him to be a man zealous for the orthodox faith, in defence of which he has incurred the bitter hate of his opponents. He points out that Christ must possess both a divine and a human will if he is at once true God and true man. Any other teaching is opposed to that of the Council of Chalcedon. No innovations must be permitted to stain the faith. Stephan and those in the East renew the request of Sophronius that the Council reject and destroy these false teachings which are again being spread abroad by Theodore of Pharan, Cyrus, and by Sergius of Joppa and his followers.

In a letter to John, Bishop of Philadelphia[4], Pope Martin says that John had been strongly recommended to him by Stephan of Dor and the eastern monks. He therefore appoints John as his vicar in the East, with the task of restoring order and appointing in the patriarchates of Antioch and Jerusalem bishops, priests and deacons. Bishop Stephan, to whom this commission had originally been given, had been hindered by others[5] from executing it.

Pope Martin wrote to a certain Pantaleon[6] in reply to his criticism of Stephan of Dor. The Pope laments the circumstance that, while Stephan had been given full authority to depose certain bishops and priests, the documents authorizing him to appoint others to fill their places had been kept from him. In this way the clergy in those districts had become insufficient for the needs. The Pope has now appointed a new vicar and instructed him whom he may or may not appoint. This new vicar is evidently John, Bishop of Philadelphia, to whom reference has just been made. How many years after 649 Stephanus continued his work we do not know[1].

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[1] Mansi X, pp. 891 E., 901 B; Harduin, III, pp. 709 ff., 720.

[2] Mansi X, p. 867.

[3] Hefele, III, pp. 216 f.

[4] Mansi X, pp. 806 ff.; Harduin, III, p. 639; Hefele, III, p. 230.

[5] Cp. Letter to Pantaleon following.

[6] Mansi X, p. 821 A; Harduin, III, p. 652; Noris, *Annus etc.* p. 455; Hefele, III, p. 231.—Nothing further is known about Pantaleon. The letter was probably written shortly after 649 (cp. Mansi).

ZACHARIUS.

From the works of St. John of Damascus (died between 963–969 A. D.) Lequien quotes[2] the title of a letter from Peter Mansur to Zacharius, bishop of Dor (written Δοάρων)[3]. Inasmuch as we know nothing further about either the sender or the receiver of this letter, it is not possible to determine its date. It would seem, however, that we have had preserved for us here a copy of a letter sent to one of the bishops of Dor, perhaps from the sixth or seventh century. Lequien's statement is as follows:

Extat inter opera S. Joannis Damasceni novae editionis Paris. 1712. to I, p. 655 A. 'epistola sanctissimi Petri Mansur ad Zachariam episcopum Doarum Δοάρων, de corpore & sanguine Christi.' Pro Δοάρων autem legendum arbitror Δώρων Dororum. Auctor enim huius epistolae, qui non fuit ipse sanctus Joannes Damascenus, cuius nec doctrinam refert, videtur commoratus in Palestina, quippe qui pag. 655 A. quaedam verba recitat ex liturgia sancti Jacobi seu Hierosolymitana. Quum vero non constet quandonam vixerit Petrus ille, pariter etiam huius Zachariae aevum definiri accuratè non potest. Eius porro hic meminimus, ex hopothesi quod reipsa fuerit, aliquo tempore, Dororum in Palestina episcopus, Zacharias nuncupatus.

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[1] Lequien, III, p. 580.

[2] *Oriens Christianus*, III, p. 580; *Opera Joannis Damasceni Monachi et Presbyteri Hierosolymitani* (Venetiis, 1748).

[3] Cp. Bishop John, p. 105.

LATER GEOGRAPHERS.

ISIDOR OF SEVILLE.

In his work Originum sive Etymologiarum Libri XX, Isidor of Seville[1] refers to Dor in the following terms (Bk. XV, ch. 1): Dor urbs fuit quondam potentissima, et versa vice Stratonis turris, postea ab Herode, rege Iudaeae, in honorem Caesaris Augusti Caesarea nuncupata. In qua Cornelii domum Christi vidit[2] ecclesia[3], et Philippi aediculas, et cubiculum quatuor virginum prophetarum.

Isidorus Hispalensis lived from 565 to 636 A. D., becoming bishop of Seville in 600. The work from which the passage above is quoted is a compilation of various sources. Among these sources[4] are included Orosius, Jerome's Onomasticon, Solinus, Servius on Vergil, Josephus' Antiquities and Suetonius. His work has not, therefore, the value of an original source.

How little his knowledge of geography really was is indicated by Isidor's evident confusion (in the passage quoted) of Dor and Caesarea. In some way his sources seem to have given him the idea that Dor was but another name for Strato's Tower; possibly on a map the names were written confusedly[5]. The mention of bishops of Dor contemporary with Isidor[6] clearly proves that the city was in existence in his day.

GEOGRAPHUS RAVENNAS.

From the seventh century there has come down to us the work of an anonymous writer on geography, who is referred to as Geographus Ravennas. His main source appears to be the Tabula Peutingeriana; in addition he used several Greek writers as sources[7].

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[1] Ed. F. V. Otto, p. 462. (=Tom III *Corpus Gram. Lat. Vet.*)

[2] Var., "videt", "est".

[3] Var. "ecclesiam".

[4] K. Miller, *Mappae Mundi*, VI, p. 59.

[5] K. Miller (*Mappae Mundi*, VI, Map 2) has tentatively reconstructed a map on the basis of the work of Isidor. On this map "dor Cesarea" appears between Tyrus and Joppe.—There are several T-shaped sketch maps preserved in MSS. of this writer.

[6] See chapter on "Bishops of Dor".

[7] Miller, *Mappae Mundi*, VI, p. 34.

As a result of this process of compilation repetitions occur. For example, in Book II, chap. 15, Phoenice is included in Syria; while in chap. 16 of the same Book II, Fenitia appears as a province of Asia Minor[1].

In Book II, chap. 15 of this work[2], Dora is included among the maritime cities (Phoenician) as follows: Item ad aliam partem iuxta mare sunt civitates, id est Biblon, Birithon, Sidone, Tyrone, Edippa, Ptolemaida, Dora.

Again in Book V, chap. 7[3], Dora is mentioned with "totas civitates circa litora totius maris magni positas[4]," as follows: Iterum civitas . . . . Ioppe, Apollonia, Caesarea Palaestinae, Dora, Ptolomaida, Ecdilpa, Tyros[5].

This reference to Dor by Ravennas adds nothing to our information about the city.

GUIDO.

In the year 1119 a certain Guido, concerning whose identity nothing definite is known, wrote a sort of universal history in six books. As a basis for his work he used the writings of the anonymous Geographus Ravennas, in such manner that his "Geographica" is little more than a recension of the earlier work[6]. From this compilation by Guido, we quote the following[7]: Si subtilius scire voluerit totas circumquaque parte per litora maris positas etc. . . . . Ioppe, Apollonia, Cesarea Phalestinae, Dora, Ptolomaida, Ecdilpa, Tyrus Sidonia. . . . .

No contribution to our knowledge of Dor is made by this late compilation of earlier materials.

THE PATRIARCHATE OF JERUSALEM.

There has been preserved part of a French Provincial (= list of bishoprics, etc.) dating from c. 1180 A.D., which names Dor first among the sees under Caesarea. It reads in part as follows[1]: (Patriarcat De Jérusalem).

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[1] Miller, *l. c.*

[2] *Ravennatis anonymi Cosmographia et Guidonis Geographica,* ed. Pinder et Parthey, p. 89.

[3] *Op. cit.*, p. 357.

[4] *Op. cit.*, p. 325. Here in the opposite order.

[5] See Miller, *Mappae Mundi,* VI, p. 30 for partial reconstructed map of Ravennas exhibiting Dora.

[6] Miller, *Mappae Mundi,* III. p. 54; VI, p. 7.

[7] *Ravennatis anon. Cosmographia et Guidonis Geographica,* ed. Pinder et Parthey, pp. 504, 524.

En Palestine, li premiers sieges: Cesaire Maritime que Herodes redesia, soz laquele sunt XIX sieges d'eveschié: Dore, Antipatrida, Jamnias, Assur, Nicople, Omis, Sorti Kayfas, Ierico, Apotas, Paumeroie, Cipon, Escomason, Essulion, Touxe, Le Sault, Constantine.

This list is extremely corrupt[2], and goes back to early Greek and Latin lists as its sources[3]. It cannot therefore be used as an argument for the continued existence of Dor down to the end of the twelfth century.

GEORGIUS CYPRIUS.

George of Cyprus[4] became patriarch of Constantinople in 1283 and abdicated in 1289. He wrote, evidently on the basis of older documents, a "Descriptio orbis romani." In this work he reproduces[5] the early churchly division of Palestine in A., B. and C., naming Dor[6] as first of the sees under the metropolis Caesarea:

Ἐπαρχία Παλαιστίνης Ᾱ.
Αἰλία Ἱεροσολύμων Ἁγία Πόλις.
Καισάρεια μητρόπολις.
Δῶρα.
Ἀντιπατρίς.
Διόσπολις ἤτοι Γεωργιούπολις.
Ἰάμνια.
Νικόπολις.
Ὄνους.
Σῴζουσα.
Ἰόππη.
Ἀσκαλών.
Γάζα.
Ῥαφία.
Ἀνθηδών.
Διοκλητιανούπολις.

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[1] Michelant et Reynaud, *Itinéraires à Jerusalem* etc., p. 12.
[2] Cp. list of Georgius Cyprius following.
[3] *Op. cit.*, p. XII.
[4] Lippincott's *Pron. & Biog. Dict.*, s.v.
[5] *Georgius Cyprius*, ed. Gelzer, No. 1000.
[6] Cp. the "Patriarchate of Jerusalem" preceding.

Ἐλευθερόπολις.
Νεαπόλις.
Σεβαστή.
Ῥεγεὼν Ἀπάθους.
Ῥεγεὼν Ἱεριχώ.
Ρεγεὼν Λιβίας.
Ῥεγεὼν Γάδαρα.
Ἄζωτος Πάραλος.
Αζωτος ἡ Ἵππινος.
Ἐυκωμάζων.
Βιττύλιος.
Τρικωμίας.
Τόξος.
Σάλτων Κωνσταντιανικῆς.
Σάλτων Γεραϊτικὸς.
ἤτοι βαρσάμων.

"Eparchy Palestine A.
Aelia[1] Jerusalem, the Holy City.
Caesarea Metropolis.
Dor,
Antipatris, etc., etc."

Dor's place in these lists seems to be regularly after that of Caesarea. It would seem that the version of Georgius Cyprius has suffered less corruption of text than that of the Patriarchate of Jerusalem above.

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[1] So named after Publius Aelius Hadrianus (Sophocles, *Greek Lexicon* s.v.).

THE PERIOD OF THE CRUSADES.

In connection with the First Crusade (1095–1099) mention of Dor is made by several historians. Foucher de Chartres[1], who himself took part in the events he is narrating, traces the route taken in 1099 by the French along the coast on their journey to Jerusalem. After a futile attempt to capture Archas, a city near the Lebanons, the army was proceeding down the coast. Regarding the march from Acre to Caesarea Foucher writes as follows:

Accon vero, id est Ptholomaida, ab Austro habet Carmeli montem. Iuxta quam transeuntes ad dexteram reliquerunt oppidum Caypham[2] dictum, post haec iuxta Doram[3], exin, iuxta Caesaream Palaestinae incessimus, quae quidem antiquitus dicta est altero nomine Turris Stratonis, in qua Herodes . . . . exspiravit infeliciter.

The anonymous author of the Gesta Francorum Iherusalem Expugnantium, writing before 1109 (who himself declares that his work is an abridgment of that by Foucher de Chartres), records this same march down the coast[4]:

Transeuntes autem Achilon[5], invenerunt oppidum Caypha dictum, quod est sub Carmelo monte, et habet mare ob Oriente, montem vero ab Occidente. Dehinc Caesaream Palaestinae adorsi sunt, quae quidem Dor[6] antiquitus, a quibusdam vero Turris Stratonis nuncupata est, in qua Herodes . . . . infeliciter exspiravit.

This account adds nothing to the information given by Foucher de Chartres. It is suggestive, however, in that the carelessness with which the author handles his source warns us against expecting any great amount of accuracy in Crusading historians.

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[1] *Recueil des Historiens des Croisades, Historiens Occidentaux* III, pp. XXVII, 354; *Gesta Dei per Francos*, ed. Bongars, I, p. 396.

[2] I.e., Haifa.

[3] One MSS. (F in the Bibliotheque de l'Arsenal, Paris) and ed. Bongars add: "vel Pirgul." This is doubtless a corruption of πύργος (see Guérin, *Sam.* II, p. 314), and refers probably to Caesarea, whose ancient name was πύργος Στράτωνος (= Turris Stratonis).

[4] *Recueil, Hist. Occident.*, III, pp. XXXVI, 508.

[5] I.e., Acre (or Accho or Accon).

[6] This is, of course, an error on the part of the writer. Possibly he is following Isidor of Spain, who makes the same mistake (see above, p. 109).

In still another record of this march mention is made of Dor. This is the anonymous history of the First Crusade (with a continuation to 1123) written in 1146-47 by order of Baldwin III of Jerusalem, and known as Balduini III Historia Nicaena vel Antiochena[1]. Beginning with the abandonment of the siege of Archas, this account reads:

> Mox obsidionem solventes, praetergressi sunt urbem Tripolim deinde urbem Beritum, post haec Sydonem, quae ab incolis Sagitta dicitur, exinde Sareptam Sydoniae, dehinc Tyrum, quam Sur nominant (Hebraice enim Soor dicitur), inde Ptolemaidam, prius Accon dictam, deinde oppidum Chaypha, exhinc Doram, post haec Caesaream Palaestinae, quae altero nomine Turris Stratonis dicitur.

Like the accounts already given, this gives us no definite information about the town of Dor.

Covering in part this same period is the work, Benedicti De Accoltis Historia Gotefridi[2], written between the years 1464 and 1466. In the midst of his description of the advance toward Jerusalem, this late historian digresses in order to explain the location of the principal cities of Judea:

> Duo in ea nobiles portus Lannetorum et Gazeon imprimis fuerunt, et infrascriptae urbes maritimae, quae praecipuae habebantur: Stratonis (Pyrgus), Caesarea, Appollonia, Azotus, Joppe, Aschalon, Gaza, Dora et Antedon.

After mentioning other Judean and the Samaritan and Galilean cities, he continues:

> Sed ex his non paucae urbibus desertae aut disiectae fuerant, quum Christiani Judaeam armis repetiverunt, plurimae quoque vetus nomen prorsus amiserant.

Casual reference to Dor is made by William of Tyre (Book X, Cap. XXVI)[3] in connection with the wounding of King Baldwin I in the year 1103 on his return along the coast after the abandonment of the siege of Ptolemais:

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[1] *Recueil, Hist. Occident.*, V, pp. XXXI, 174 E.

[2] *Ibid*,, pp. CXXXV, 599 C. Practically his only source was the work of William of Tyre.

[3] *Ibid.* I, Part I, p. 440.

Volensque per Caesaream redire, accidit quod in loco, qui dicitur Petra Incisa[1], iuxta antiquam Tyrum[2], inter Capharnaum[3] et Doram, oppida maritima, qui locus hodie Districtum[4] appellatur, praedones et viarum publicarum effractores invenit. Etc. etc.

This same writer again makes incidental reference to Dor in his account of the fruitless siege of Tyre in the year 1111, as follows[5]:

Est autem Tyrus civitas in corde maris sita, in modum insulae circumsepta pelago, caput et metropolis provinciae Phoenicis, quae a rivo Valeniensi, usque ad Petram Incisam, Dorae conterminam[6], protenditur; infra sui ambitum, urbes suffraganeas continens quatuordecim.

In none of these instances cited is mention made of any settlement or fortress at Dor. Nothing is said concerning the town that could not be gathered from ancient literary sources. Benedict's statement[7] above to the effect that some of the towns he mentions were deserted or destroyed was quite probably true of Dor at this time. If a town named Dor had existed at this period we should certainly have expected some reference to the name in the account of Richard's march down the coast in 1191[8]. Apparently these historians of the Crusades knew of the existence and location of Dor, not from personal observation or through the accounts of those who had visited the place, but from ancient Biblical and geographical notices. We are, accordingly, uninformed regarding the real status of Dor at this time.

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[1] According to Conder (P.E.F., *Spec. Pap.*, p. 275), "The old name for Khirbet Dustrey, the outlying fort of 'Athlīt, is Petra Incisa (The Scarped Rock)." The name is probably derived from the passage through the rocky ridge near 'Athlīt.—See also the notes on geography in *Recueil, Hist. Occident.*, I, Part I, p. XXVI.

[2] Also known as St. John of Tyre: Michelant et Raynaud, *Itinéraires Francais*, pp. 229 (Pelrinages et Pardouns de Acre), 901 (Les Pelerinaiges por aler en Iherusalem).

[3] See below, pp. 117 f.

[4] *Recueil, l. c.*

[5] *Recueil, Hist. Occident.*, I, Part I, p. 482.

[6] Probably nearer 'Athlīt than Dor. There are a number of these passages through the ridge between Dor and 'Athlīt.

[7] P. 114.

[8] See below, pp. 116 ff.

At the end of the work by William of Tyre[1] there appears (very likely added by another hand) a list of the cities subject to the principality of Jerusalem. As in the earlier lists[2], Dor appears first among the cities under the archbishopric of Caesarea :

I Sedes Prima, Caesarea Maritima. Sub hac sede sunt episcopatus XIX
Dora
Antipatrida
Iamnias
Nicopolis, etc., etc.

This bare mention of the name "Dora" does not indicate that the city flourished at the time. Here, too, old lists doubtless formed the basis of the enumeration.

At the time of the Third Crusade (1189–1192), Richard marched along the coast with his army. After the capture of Acre (Summer 1191), he started toward Joppa. The route taken and the difficulties of the march are thus described by Geoffrey de Vinsauf[3]:

". . . . On a Wednesday, which was the third day after stopping at Cayphas (= Haifa), the army moved forward in order, the Templars leading the van, and the Hospitallers closing the rear, both of whom by their high bearing gave evidence of great valour. That day the army moved forward with more than wonted caution, and stopped after a long march, impeded by the thickets and the tall and luxuriant herbage, which struck them in the face, especially the foot soldiers. . . . . When the king had proceeded as far as Capernaum, which the Saracens had razed to the ground, he dismounted and took some food, the army, meanwhile, waiting; those who chose took food, and immediately after proceeded on their march to the house called 'of the narrow ways,'[4] because the road there becomes narrow; there they halted and pitched their tents. . . . . The army remained two days at the abovementioned station, where there was plenty of room for their camp, and waited there until the ships arrived which they were expecting; namely, barges and galleys, laden with provisions, of which they were in need; for these vessels were sailing in connection with the army along the shore, and carried their provisions on board. The army advanced, using all precaution against the Turks, who kept on their flank, to a town called Merla[1], where the king had spent one of the previous nights; there he had determined that he would lead the van himself the next day, on account of the obstacles in the way and because the Templars kept guard in the rear; for the Turks continually threatened them in a body on the flank . . . . The army, after accomplishing its march with great difficulty, arrived that day at Caesarea[2]."

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[1] *Recueil, Hist. Occident.*, I, Part II, p. 1136.

[2] See pp. 101, 110 f.

[3] *Itinerarium Ricardi* (ed. T. Gale), IV, 12 ff.—English translation by H. G. Bohn, *Itinerary of Richard I*, Bk. IV, §§ 12–14.

[4] Or, "Casal of the Narrow Ways." ("Casam dictam angustarum viarum," in ed. T. Gale).

The Capernaum mentioned above is strangely supposed by Conder[3] to be ancient Dor. He cites as authority for this identification Rabbi Benjamin of Tudela, who travelled southward along the coast to Caesarea between 1166 and 1171. The passage in Benjamin reads[4]:

ומשׁם ארבע פרסאות לכפר נאום והוא כפר דנחום והוא מעון
מקום נבל הכרמלי: ומשׁם שׁשׁה פרסאות לשׁיזיראה הוא גת
אשׁר לפלשׁתים·

"From there (i.e., Haifa), it is four parasangs to Capernaum, which is the village of Nahum, identical with Maon, the place of Nabal the Carmelite[5]. And from there it is six parasangs to Caesarea, which is Gath of the Philistines."

Conder mistakenly understands the passage to indicate that the distance from *Haifa* (instead of from Capernaum!) to Caesarea is six parasangs. He therefore argues that the proportional distances of four and six parasangs from Haifa to Capernaum and Caesarea respectively, point to the identification of Capernaum with ancient Dor. Capernaum is more probably to be placed at

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[1] Ed. T. Gale: "ad oppidum Mirlam dictum." According to Dr. Stubbs, this was on Aug. 30, 1191.

[2] The main body passed the night at the Crocodile River (Nahr el-Zerka), north of Caesarea.

[3] P.E.F., *Special Papers*, p. 275.

[4] M. N. Adler, *Itinerary of Benjamin of Tudela*, pp. לא f.

[5] Maon is, of course, contiguous to another Carmel situated in Judah (1 Sam. 25:2 ff.). Benjamin simply cites the faulty identification current in this region. So also in the case of Gath.

Al-Kunaisah[1] (the Little Church), a mound a few miles north of ʻAthlīt[2]. This would fit the proportional distance given by Benjamin. William of Tyre[3] makes a clear distinction between the maritime cities of Capernaum and Dor. Conder's identification of the two is in any case absurd[4].

The "house of the narrow ways"[5] is probably near ʻAthlīt[6]. The name arose from the rock-cut passages through the coast ridge; of these there are several between ʻAthlīt and Dor[7]. The harbor at ʻAthlīt would have made possible the landing of provisions. This identification is to be preferred to that of Conder, who wishes to identify the Casal (as well as Capernaum) with Dor. It is hardly probable that the heavily armored soldiers would have attempted to make the march of twenty miles to Dor in one day; more likely they encamped at ʻAthlīt.

Concerning the location of the next place mentioned, viz. Merla (or Mirla or Merle), there is considerable doubt. If our identifications thus far have been correct, it must lie somewhere between ʻAthlīt and Caesarea, the town next in order. The narrative here does not make clear whether it was on the coast or inland on the main road. Elsewhere, a Merle is spoken of as a fortress belonging to the Templars[8]. Among the fortresses of Palestine captured by Saladin after his defeat of King Guy, July 6, 1187, are included Castellum Merle Templi and Castellum de Planis[9]. Bohaeddin in his account of this march along the coast[10] gives the name as El-

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[1] Or, Tell Kanīsah. See especially DeGoeje's note in his edition of Moḳaddasī, *Bibl. Geogr. Arab.* III, p. 192, note *m*.

[2] Guy le Strange, *Pal. under the Moslems*, p. 477; Adler, *op. cit.*, pp. 31, 32; *Recueil, Hist. Occident.*, I, Part I, p. LIV.

[3] Above, p. 115: "inter Capharnaum et Doram, oppida maritima."

[4] T. A. Archer, *Crusade of Richard I*, p. 376 (note F.).

[5] P. 116.

[6] Archer, *l.c.; Itinerarium Regis Ricardi* (Rolls Series) p. 255; *Recueil, Hist. Occident.*, I, Part I, pp. XXVI, LIV.

[7] Conder, P.E.F., *Spec. Papers*, p. 275; above p. 13.

[8] W. Stubbs, *Hist. Introd. to the Rolls Series* (ed. Hassell), p. 329.—In the Pelrinages et Pardouns de Acre of the 13th or 14th cent. (Michelant et Reynaud, *Itinéraires à Jèrusalem*, p. 229), it is stated of "Chastiel Pelryn:" "e de près est Merle."

[9] *Chronicle of the Reigns of Henry II and Richard I*, by Benedict of Peterborough (Rolls Series), II, p. 23.

[10] *Recueil, Hist. Orient.*, III, pp. 246, 248; *Itinerarium Regis Ricardi* (Rolls Series), p. 255; Wilken, *Geschichte der Kreuzzüge*, IV, p. 407.

Mellaḥa (الملّاحة). Apparently the fortress at Merla had been destroyed by 1191, for there is no mention of a fortress there either in the Itinerarium or in Bohaeddin's Life of Saladin just mentioned.

Attempts have been made to identify Merla with Dor[1], and such an identification is not impossible. However, in view of the fact that Dor lies off the coast road, it may be better with Conder[2] to locate Merla at El-Mezra'a[3] between Dor and Caesarea, where a strong Crusading tower still remains in ruins beside the main road. Withal, we must still admit the possibility that the ruins at Dor (if they be of the Crusading period at all) are those of Merla. It seems almost certain, however, that *the fortress* was not standing when Richard passed through this region. Otherwise some reference to it would doubtless have been made.

Having arrived at Joppa, Richard issued orders to the army to rebuild the fortresses of Plans and Maen[4]. The Templars, while engaged in this work at Plans, were attacked by Turkish cavalry from Bombrac. King Richard, who was busy rebuilding Maen, heard of the tumult, and on his arrival succeeded in driving away the Turks.

Conder[5], again relying upon Benjamin of Tudela[6], identifies Maen with Capernaum, and therefore with Dor. Plans he places at Kalensawieh, situated about twenty miles from Dor and a like distance from Ibn Ibrak (=Bombrac). But the account of the proceedings in the Itinerary makes it clear that Maen and Plans are in the neighborhood of Joppa. Dor, which is nearly forty miles away, cannot possibly be meant. Dr. Stubbs[7] suggests that Plans is the village of Beit Dejan, five and one-half miles S.E. of Joppa, and that Maen is to be sought at Saferiyeh, seven miles S.E. of Joppa. These two towns are only one and one-half miles apart; this would make it easily possible for the king to rush quickly to the rescue of the attacked Templars. These identifications are very probable ones; those of Capt. Conder are absolutely impossible.

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[1] *Recueil, Hist. Occident.*, I, Part I, p. LIV; G. A. Smith, *Hist. Geog.*, p. 130.

[2] P.E.F., *Spec. Pap.*, p. 275; Archer, *l.c.*; *S.W.P. Mem.*, II, p. 4.

[3] The similarity in the names is to be noticed.

[4] *Itin. of Richard I*, Bk. IV, §§ 29, 30 (Bohn's translation).

[5] P.E.F., *Spec. Pap.*, p. 277.

[6] See above, pp. 117 f.

[7] Archer, *Crusades of Richard I*, p. 176.

The results of our investigation of the history of Dor during the Crusading period are negative. The references to the town under the old name Dora, we have concluded, are merely reminiscences of the earlier days of the city; in any case they supply no information. The identification of Capernaum and Maen with Dor have been shown to be impossible; that of the "house of the narrow ways," improbable. There is a possibility (though not a probability) that Merla represents ancient Dor. In our present inadequate knowledge of the Crusading period, with its confusion and constant change of names, it seems impossible to decide what there was on the site of Dor at this time. At some period the fort whose ruins still lie scattered about must have been occupied. A more exhaustive study of Crusading documents or the use of the spade on the spot may throw light upon the history of Dor during the Crusades.

THE ARAB GEOGRAPHERS.

The outstanding fact is that Dor (طنطورة) *is not mentioned at all* by the classical Arab geographers (i. e. during the 9th to the 12th centuries A. D.). Moreover, in their various enumerations of the cities and towns on the Syrian coast, or along the travelled roads in that region, they habitually "skip over" Dor in a way that shows that they know of no town there worth mentioning.

Thus, Ibn Khordādhbeh, in the first half of the 9th century, describes the maritime district of central Syria with mention of ʻAkkā, Ḳadas, Tyre; Jaffa, Caesarea, Nābulus[1]. Similarly Yaʻḳūbī, at the close of the 9th century, mentions Tyre and ʻAkkā, and then proceeds inland with his description; then returning to the coast he names Caesarea, Jaffa, and Jamnia[2].

Much more significant still is the fact that in the great geographical dictionary of Yāḳūt (about 1200 A. D.), as well as in that of Bekrī (latter part of the 11th century), Ṭanṭūra does not occur. Yāḳūt, in his article on قَصْرُ حَيْفَا, a fortress in the Ḥaifā region, has occasion to speak of the coast south of the latter city. Ḳaṣr Ḥaifā, he says, is "a place *between Ḥaifā and Caesarea*" (موضع بين حيفا وقيسارية). Obviously Caesarea was the first town south of the Carmel promontory known to this geographer's sources. Yāḳūt, it may be added, mentions ʻAthlīt (عثليث) as a fortress which had been taken by Saladin in 583 A. H. (1187 A.D.).

The evidence gained from the Arab geographers, then, appears to be this, that between the 7th and 12th or 13th centuries the coast region between ʻAkkā and Caesarea was only sparsely inhabited. The road along the shore was probably unsafe and little used.

Ḥaifā almost disappears from sight, from the 7th century down to 1100 A.D., when the town was besieged and taken by Tancred. The remark of Ibn Shaddād quoted by De Goeje, from a Leyden manuscript, in his edition of Yaʻḳūbī[3], is instructive. Ibn Shaddād has just noted the fact that both Yaʻḳūbī and Ibn Ḥauḳal omit to mention Bāniās, apparently because it had only recently been restored and was only known as "modern" (مُحْدَثة); and then proceeds: ولم يذكر ابن ابى يعقوب ولا ابن حوقل حيفا وكأنها مُحدَثة ايضًا ; "Nor do Ibn Abī Ya'ḳūb (i. e. al-Ya'ḳūbī) and Ibn Ḥauḳal mention Ḥaifā, presumably because it also was modern."

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[1] *Bibl. Geogr. Arab.* VI, Trans., pp. 57, 58.

[2] *Ibid.* VII, 327, 18 ff.; 329, 2 ff.

[3] *Loc. cit.*, pp. 327 f., note *e*.

'Athlīt came into temporary prominence in the crusading period simply because of its very strong natural position. The Arab geographers before Yāḳūt do not mention it at all. As for Dor, it seems to have been nearly or quite deserted from the 7th century until after the third crusade (at least). Even Caesarea was reduced, during this same period, to a small and unimportant town. Thus Yāḳūt[1] says of it that it had once been an important city; "At present, however, it is not such, but is rather a village than a city:" وأمّا الآن فليست كذلك وهى بالقُرَى أشبه منها بالمدن .

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[1] IV, 214, lines 3–6.

THE VISITS OF THE CHEVALIER D'ARVIEUX.

From about the year 1660 we have the reminiscences of a certain Chevalier d'Arvieux[1], who, in addition to looking after his own commercial interests, acted as a sort of French consul at Sidon[2]. On a trip from Sidon to Gaza, d'Arvieux stopped at Tartoura in order to arrange for permission for the Carmelite monks to return to their monastery on Mount Carmel. Having arranged this matter satisfactorily, he viewed the city. The translation of d'Arvieux's version of this visit into quaint eighteenth-century German is as follows[3]:

Man rechnet drei Meilen von dem Schlosse Pellegrin (='Athlīt) nach Tartoura. Wir stigen daselbst bei einem griechischen Christens, Namens Abou-Moussa, ab, und brachten die Nacht in einem Zimmer zu, wo wir gedachten, das uns die Flöhe auffressen würden. Weil wir bei guter Zeit alda anlangten, so ging ich alsobald mit dem Herrn Souribe nach dem Feldlager des Emir Turabey, um die Wiedereinsetzung derer Carmelitermönche in ihr Kloster auf dem Berge Carmel zu vermitteln. Sie waren, durch die Verfolgungen derer Araber, genöthiget gewesen, selbiges zu verlassen. Das Feldlager dieses Emirs war nur eine Viertelmeile von Tartoura entlegen. Wir wurden von diesem Fürsten, der sehr ehrbar war, recht wol empfangen, und er willigte sehr höflich in unser Begehren. Wir brachten den iährlichen Tribut in Richtigkeit, welchen diese Mönche zu geben pflegten, und sie kehrten wieder in ihr Kloster zurük.

Hiernächst kehrten wir wieder nach Tartoura, und hatten noch Zeit genug übrig, dasienige zu besehen, was in diesem kleinen Orte, der nur aus einer einzigem ziemlich grossen Strasse, die nach dem Meere hin gehet, angetroffen wird. Daselbst wird der Markt

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[1] Born 1635, died 1702.

[2] *Memoires du Chevalier d'Arvieux*, par C. R. P. Jean Baptiste Labat, Paris 1735, 6 vols. The only copy of this work in America is the one at Hamilton College, Clinton, N. Y. (so Meyer, *Gaza*, p. 105). This I have been unable to consult.

[3] *Des Herrn von Arvieux . . . . merkwürdige Nachrichten . . . . von dem Herrn Labat* (Kopenhagen und Leipzig, bei Johann B. Ackermann, 1754), Part II, pp. 11–13.

gehalten, wo die Araber ihre Räubereien, und die da herum wohnenden Bauren ihr Vieh & Früchte hinbringen, so sie gegen Reis & Leinwand vertauschen, welche die Egyptier in kleinen Fahrzeugen hinführen, weil der Hafen, oder eine Art von Hafen, der vor der Stadt ist, keine hinlängliche Tiefe hat, dass grössere Fahrzeuge einlaufen können. Die Einwohner haben keine Moscheen, sondern sie versamlen sich auf dem öffentlichen Platze, wo sie das Erdreich ohngefehr zwei Fus hoch erhöhet, und mit einer kleinen Mauer eingeschlossen haben. Alhier kommen sie in der Zeit ihrer Betstunden zusammen unter offenem Himmel. Ganz dicht darbei ist ein Kahue, welches das schönste Gebäude, und das am meisten daselbst besuchet wird. Der Name desselben zeuget zur Genüge von seiner Bestimmung. Jederman versamlet sich alda, Tabak zu rauchen, Kaffee zu trinken, und neue Zeitungen zu erzehlen oder zu hören.

Tartoura würde Mangel an gutem Wasser zum Trinken haben, wenn es nicht eine kleine Quelle auf einem Felsen, zwei Ruthen in das Meer hinaus, hätte, die aber bei der geringsten Aufwallung des Meers mit Wellen überschlagen wird. Man trift zwar andere Quellen an verschiedenen Orten daherum an, sie sind aber salzigt, und es ist eben diese kleine Klippe, die vom Meergewässer umzingelt wird, deren man an diesem Orte so oft benöthiget ist.

Die ganze, um diesen Ort liegende Gegend ist ziemlich unfruchtbar, blos und ohne Bäume. Das Erdreich träget nur Korn. Der Emir Turabey hat einen Pachter in Tartoura, der den Zoll, den Caffar, oder Wegezoll, nebst denen andern Abgaben eintreibet, die in diesem Flecken beim Ein=und Ausgang müssen entrichtet werden. Der Herrn Souribe hatte mit dem Abou-Moussa einige Geschäfte abzuthun, welche uns fast den ganzen Vormittag des folgenden Tages aufhielten; also, dass wir erst nach einem des Mittags eingenommenen Frühstücke uns auf den Weg nach Cäsarea machten, welches nur vier Meilen davon entlegen ist.

Again in 1664 d'Arvieux pays another visit to Tartoura. At this time the shipwreck of a Greek ship, with a wine-banquet of the native rulers following thereupon, furnishes our author with materials for a vivid picture of native manners and customs[1]:

Tartoura ist ein kleiner unter die Herschaft des Emir Turabey gehöriger Hafen. Wir waren kaum daselbst angelanget, als bei dem ungestümen Wetter ein grosses griechisches Fahrzeug auf denen Sandbänken strandete. Es war mit cyprischem Weine und Käse beladen, und nach Egypten bestimt. Sobald es veste sas, ward es in wenig Minuten von denen Wellen zerschlagen, und die ganze Manschaft flüchtete ans Land. Der Käse blieb im Meere liegen, die Weinfässer aber rolten mit denen Wellen fort. Der Emir Dervik, welcher den Schifbruch von dem Gebirge herab gesehen hatte, eilte mit einem Theile seiner Reuterei und einigen Bedienten des Grosemirs herbei, welche mit Plünderung derer Matrosen und Reisenden den Anfang machten, und durch die Araber die zerscheiterten Stüke des Fahrzeuges, nebst allem, was das Meer landwärts trieb, herausziehen liessen. Als sich der Schiffer mit allen seinen Leuten nakend entkleidet sahe, verbargen sie sich im Gesträuche, und erwarteten der Nacht, um sich nach dem nächsten Dorfe zu begeben, damit sie etwas zu ihrer Bedekung bekommen könten. Ich tröstete sie über ihren gehabten Verlust, und sagte ihnen, dass ich ein Christ sey, und bei denen Arabern in einigem Ansehen stünde; daher wolte ich suchen, ihnen Dienste zu leisten. Sie waren sehr froh, dass sie mich angetroffen, und mich ihre Sprache, die gemeine griechische, reden hörten. Ich that ihnen den Vorschlag, dass sie das, was aus dem Meere könte gerettet werden, solten herausziehen helfen, so wolte ich machen, dass ihnen etwas wiedergegeben würde. Ich machte, das der Emir solches gut aufnahm, und mir versprach, sie zu befriedigen.

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[1] *Op. cit.*, Part III, pp. 75–82.

Als sich nun diese armen Matrosen, die Gewaltsamkeit derer Wellen ohngeachtet, so die Kaufmansgüter ans Land warfen, und nachher wieder in die weite See zurük zogen, ins Meer geworfen hatten, retteten sie viele Sachen. Man konte das Zerschlagen derer Tonnen nicht verwehren; sie vermogten nur zwei davon zu retten, und die brachten sie mit vieler Mühe ans Land. Die Araber hatten einige Käse aufgefischet: da sagte ich im Scherz zu ihnen, sie wären aus Saumilch gemacht, alsobald warfen sie selbige hin, wuschen sich die Hände, und die Griechen benüzten sich ihrer. Es fing an, spät zu werden, und das Meer war so ungestüm, dass die Matrosen nicht mehr arbeiten konten. Ich bat den Emir, ihnen ihre Kleider wiedergeben zu lassen. Er gab deshalb Befehl, und die Araber stelten ihnen den grösten Theil dererselben wieder zu; weil der Emir aber in Tartoura unter Zelten schlafen wolte, die er hatte aufschlagen lassen, so machte ich ihnen

Hofnung, noch etwas für sie zu erhalten: ich gab ihnen den Rath, zu warten, bis er zu Abends abgespeiset hätte, damit sie ihn bei muntererm Gemüthe antreffen mögten. Der Emir befahl, dass man ihm die Abendmahlzeit zubereiten solte: nichts war seinen Bedienten leichter, denn alle in dem Dorfe befindliche Leute hatten ihm Geschenke von Fleisch, Vogelwild, Wildpret, Früchten und Kaffee gebracht, niemand aber hatte an Wein gedacht; ich fand zwei Krüge voll bei einem Griechen des Dorfes, Namens Abou Moussa, welche ich dem Emir durch diese arme Matrosen überreichen lies. Der Fürst nahm sie mit Vergnügen an. Wir sezten uns an Tafel: ich gab denen Griechen ein Zeichen, sich aussen vor dem Zelte aufzuhalten und zu warten, bis ich sie hinein führen liesse; unterdessen wurde ihnen zu essen gereicht.

Die Mahlzeit war gros, währete lange. Es waren viele Araber, die keinen Wein trunken, daher der Emir, ich, und vier bis fünfe von seinen Bedienten genug daran hatten. Man trug die Schaalen in der Runde herum, man sang gut und schlecht, und dieser Landzeitvertreib war vergnüglich. Nun glaubte ich, dass es gelegene Zeit sey, die Griechen herein kommen zu lassen; daher lies ich sie rufen; sie kamen Haufenweise herein, küsten die Weste des Emirs, und begaben sich zur Seite. Der Fürst frug mich, ob man ihnen nicht ihre Kleider wiedergegeben hätte, und ob sie noch sonst etwas verlangten? Ich antwortete ihm: seine Befehle wären sehr genau volzogen worden, weil aber diese armen Leute durch den Verlust ihres Fahrzeuges und ihrer Kaufmansgüter zu Grunde gerichtet worden, so fleheten sie um die durch den Schifbruch zerscheiterten Stüke, so sie auffischen könten, die nicht beträchtlich wären, und ihnen doch dienen könten, sich wieder nach ihrer Heimat zu begeben, und ihren elenden Familien unter die Arme zu greifen. Dieienigen aus der Geselschaft, welche daraus Nutzen zu ziehen wünschten, sezten sich dagegen; der Emir aber bewilligte ihnen selbige, nach einiger Ueberlegung, und befahl auf der Stelle, dass man ihnen alles, bis auf einen Nagel, solte wegnehmen lassen. Mehr wurde darzu nich erfordert. Die Griechen küsten ihm zur völligen Danksagung den Saum der Weste, und machten sich alsobald fort, um an Auffischung dessen, was das Meer auf die Küste warf, zu arbeiten, in der Hofnung, das übrige des folgenden Tages zu verrichten; denn, weil der Wind gefallen war, so muste das Meer ruhiger werden, der Emir auch mit allen denen, die sie hätten verhindern können, aufbrechen solte.

Ich stund mit Anbruche des Tages auf, lies zwei Schlitten machen, um die zwei Fässer Wein auf das Gebirge zu schaffen: vor einen ieden Schlitten lies ich drei Paar Ochsen spannen, und die Fässer wol bevestigen. sagte auch zum Emir, dass ich die Fortschaffung besorgen wolte, damit sich kein Zufal dabei ereignen mögte. Ich nahm alle die Bauren, die ich darzu nöthig zu seyn erachtete, und wir machten uns auf den Weg. Die Ochsen gingen so langsam, und unsere Bauren waren zu dergleichen Arbeit so wenig aufgelegt, dass wir erst um sechs Uhr des Abends in dem Lager des Emir Dervik anlangten. Der Emir war so vergnügt, seine zwei Tonnen gesund und wol behalten zu seinem Hoflager gebracht zu sehen, dass er denen Bauren grosmüthig für ihre Mühe eine Vergeltung gab, und augenbliks Boten an alle die Emirs abfertigte, von denen er wuste, dass sie sich über das Verbot des Weintrinkens kein grosses Gewissen machten, um ihnen zu berichten, dass er zwei grosse Tonnen davon in seiner Wohnung habe, und sie zur Theilnehmung daran einzuladen. Sie liessen ihm zurük sagen, sie hätten es schon erfahren und sich, ihn zu besuchen, auch die Nacht mit ihm in seinem Lager zuzubringen, angeschikt, daher möge er sich nur fertig machen sie wol zu empfangen, und herrlich zu bewirthen.

Der Emir Dervik, als der iüngste von allen diesen Fürsten, empfing diese Zeitung mit einer ungemeinen Freude. Er war über diese Gelegenheit erfreuet, ihnen Zeichen seiner Freundschaft zu geben. Daher stelte er Befehle zu einem Feste aus, und alsobald sahe man im ganzen Lager ein volkommenes Schlachten und Rösten von Ochsen, Hameln, iungen Ziegen, Vogelwild und Wildpret. Viele Zelte waren mit Weibespersonen angefüllet, welche mit Zurichtung derer Suppen, gewürzter Speisen, Bakwerk, Früchten und Zukergebakenem beschäftiget waren. Ich nahm die Aufsicht des Weins über mich, der nicht sonderlich klar war, diese Leute aber fragen wenig darnach. Es war fürtreflicher cyprischer Wein. Ich lies die beiden Tonnen in das grosse Festgezelt an einem Orte hinlegen, wo sie niemanden im Wege waren. Ich stelte einen von meinen Leuten zu ieder Tonne, und als ich in meinem Schreibezeuge einige neue Federn fand, machte ich Kleine Röhren daraus, um den Wein abzuzapfen, und die Schaalen zu füllen, welche von denen Bedienten rund herum denen Gästen zugebracht wurden. Ich wolte dem Emir zeigen, wie man bei denen Franzosen das Fleisch brätet. In Ermangelung eines Bratspiesses, nahm einer von meinen Leuten eine alte Lanze, machte einen Handgrif daran, und stekte einen grossen Mürbebraten darauf, nebst einem Hamelsviertheil und Vogelwild, lies sie nach unserer Weise braten, und auftragen. Ich zerlegte diesen Braten und reichte ihn herum; und diese Fürsten gestunden, dass unsere Weise, Fleisch zu braten, besser als die ihrige, sey, weil unser Fleisch seinen Saft behält, da hingegen das ihrige troken, fast verbrant und unschmakhaft war.

Wir hatten keine Flaschen, weil diese bei denen Arabern nicht gebräuchlich sind, man schenkte aber die Schaalen wieder voll, ie nachdem sie ausgeleeret wurden. Alle eingeladene Emirs langten zusammen an, und nach denen Höflichkeitsbezeigungen, denen Umarmungen, dem Bart-und Händeküssen, ie nachdem es der Gebrauch und die Würde derer Personen erforderte, sezte man sich auf Matten nieder. Die Emirs hatten samtene küssen, die andern hatten keine, und sassen mit gekreuzten Füssen, wie unsere Schneider. Nach einer ziemlich kurzen Unterredung legten die Eingeladene ihre grossen Schnupftücher, die sie an statt derer Tellertücher gebrauchten, vor sich, ihre Kleider zu verwahren, und man trug grosse kupferne verzinte Beken mit gebratenem, gekochtem Fleische und gewürzten Speisen auf. Die Suppen waren überflüssig, und von verschiedenen Arten. Das hiernächst aufgesezte Bakwerk war wol gerathen. Der Braten, welcher zur lezten Tracht verwahret wurde, dienete zu Zwischengerichten, und man fand ihn gut. Hierauf kam die Frucht. Alle Gäste speiseten mit grossem Appetite. Man trug neue Schüsseln auf, ie nachdem einige ausgeleeret waren, oder die Emirs selbige ihren Leuten geschikt hatten, welche Rottenweise geordnet waren, und mit eben so grossem Appetite, als ihre Herren, assen. Die Schaalen gingen rund herum, und der Wein verbreitete die Freude über alle Eingeladene. Die Schalmeien, Violinen, Trompeten und Trommeln machten eine Musik, die man sehr weit hören konte. Sie spielten bisweilen besonders, und zuweilen alle mit einander. Ihre schmachtende Stükchen machten unsere Trinker ganz entzükt; sie sassen nachsinnend mit ihren Schaalen in denen Händen, weinten aus Zärtlichkeit, umarmten sich, küsten einander den Bart, und gaben sich die zärtlichsten Versicherungen von der Welt. Die Mahlzeit währete so lange, dass man erst nach Mitternacht um drei Uhr von der Tafel aufstunde. Alsdenn legten sich dieienige, so des Schlafes benöthiget waren, auf Matratzen und Küssen, womit die Matte, welche auf dem Fusboden lag, bedekt war. Die ersten, so des Morgens gegen zehen Uhr erwachten, riefen die andern. Ich rieth ihnen, Kaffee mit Milche zu trinken, den meine Leute zubereiten musten, und hierdurch erwies ich ihnen einem Dienst, dessen sie höchlich benöthiget waren: denn die meisten hatten Kopfschmerzen. Nach dem Kaffeetrinken und einem kurzen Spazirgange sezte man sich zur Tafel, und fing auf neue Unkosten wieder zu essen und zu trinken an; diese Uebung ward drittehalb Tage wiederholet, nehmlich so lange, als der Wein währete, und da schieden sie, in Erwartung, dass anderer kommen solte, als die besten Freunde von der Welt auseinander.

Bei diesem langen Feste bemerkte ich zwei Dinge, die mir Vergnügen erwekten. Erstlich, dass diese Leute, die gemeiniglich sehr mäsig leben, auch eine so grosse Beschwerlichkeit ertragen konten, als die bei diesem langen Gastmahle war, ohne dass man es an ihnen durch die Zeichen abnehmen konte, die gemeiniglich der Schwelgerei folgen. Zweitens, dass unter so vielen Leuten, die diese lange Mahlzeit hindurch überflüssig Wein trunken, sich nicht die geringste Unordnung äusserte: man hörte nicht das geringste Stichelwort, noch den geringsten Vorwurf. Hingegen blieben sie in ihrer Ernsthaftigkeit, und der Wein machte sie nur ein wenig munterer, lustiger, zwar ein wenig freier, aber ohne die Schranken der Höflichkeit, des ganzen Wolstandes und der Achtung, die sie einander schuldig waren, zu überschreiten; daher sie mit tausend derer zärtlichsten Freundschaftsbezeugungen und allen Höflichkeiten, die man von Leuten ihres Standes erwarten konte, von einander schieden.

LATER VISITORS AT DOR.

After the Chevalier d' Arvieux, the first explorer to visit Ṭanṭūra whose writings we possess was Richard Pococke[1]. In the year 1737, accompanied by a retinue sent along with him by the sheik at 'Athlīt, Pococke reached "Tortura." This he describes as a small village with a port to the south into which large boats are sometimes forced to put by stress of weather; on such occasions passengers are forced to pay a tax of nine shillings a head. The sheik at Ṭanṭūra received him and his companions with great civility. Having visited Caesarea, Pococke on his return travelled along the road a half mile to the east of Ṭanṭūra intending to pass by it. The sheik, however, sent some of his people in pursuit of Pococke with an urgent invitation to dine with him. For fear of giving offense, Pococke returned and accepted his invitation.

On the 14th of January, 1816, "Tartoura" was visited by J. S. Buckingham[2]. At that time there were forty or fifty dwellings and perhaps 500 Mohammedan inhabitants in the town. Buckingham cites Father Julio of Mt. Carmel as authority for the statement that the ruined tower at Ṭanṭūra was for some unknown reason called by the Franks the "Accursed Tower." The Arabs, he says, called it merely "Khallat-el-Ateek" (the Old Castle). During supper he was in characteristic fashion questioned as to his destination and business by the elders of the village. "They eagerly inquired after Bonaparte, whom they all knew"[3]. On awaking the following morning Buckingham discovered that all the remaining provisions had been stolen from the baskets during the night.

Irby and Mangles[4] passed through "Tortura" on October 15th, 1817. They characterize the extensive ruins here as possessing nothing of interest.

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[1] *A Description of the East and Some Other Countries* (London, 1745), II, p. 57.

[2] *Travels in Palestine*, etc. (London, 1822), p. 123.

[3] Napoleon passed along the shore road on his way to the disastrous engagement at Acre.

[4] *Travels in Egypt and Nubia, Syria and the Holy Land* (1844), p. 59.

In the month of May, 1843, John Wilson[1] found a "few wretched houses" at Ṭanṭurah.

C. W. M. van de Velde[2] visited Tantūra in 1851. He calls particular attention to the ridge of rock east of Dor, which served as a protection against attack from that direction. The outrageous prices charged by the natives created considerable difficulty, until Dr. Kalley (van de Velde's companion) packed up his medicine bag with a threat to treat no more patients. The inhabitants then became open to reason.

The first thorough-going description of the ruins at Dor was that of (Hugo) Victor Guérin[3], who visited and described the site in 1870. The results of his observations have been employed in the chapter above on the "Topography of Dor." At the time of Guérin's visit "Tantoura" possessed two mosques[4], one of them partially demolished.

Still more thorough and complete was the survey made by the Palestine Exploration Fund[5] on the 8th of March, 1873. The accurate maps, plans, pictures and descriptions issued by the Fund constitute our principal authority for the description of the ruins at Dor. Additions to the information contained in this report have appeared in the Palestine Exploration Fund Quarterly[6].

Ṭanṭūra lies off the usual tourist routes near unhealthful swamps, and is therefore seldom visited. Beside a few illustrations accompanying some of the descriptions mentioned above[7], it has been impossible to obtain satisfactory pictures of the site. A renewed examination of the ruins would doubtless yield interesting additions to our information concerning ancient and mediaeval Dor. It is to be hoped that such an examination will be made before all the material has been removed or destroyed.

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[1] *The Lands of the Bible Visited and Described* (Edinburgh 1857), II, p. 249.

[2] *Narrative of a Journey through Syria and Palestine in 1851 and 1852* (Edinb. and London, 1854), I, p. 333.

[3] *Description de la Palestine*, II Partie—Samarie—(Paris, 1874–75), 2 : 305 f.

[4] When Buckingham (see above) visited Ṭanṭūra in 1816 the town was without a mosque.

[5] *Survey of Western Palestine, Memoirs of the Topography*, etc. (London, 1881–83), II, pp. 3 ff.

[6] 1887, p. 181; 1895, p. 113 (Reports by Dr. G. Schumacher).

[7] *S. W. P. Mem.* II, pp. 10 ff.; *P.E.F.Q.*, (1887), p. 84; Wilson, *Pict. Pal.*, III, p. 105.

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TRANSACTIONS OF THE
CONNECTICUT ACADEMY OF ARTS AND SCIENCES
INCORPORATED A. D. 1799

VOLUME 20, PAGES 133-144 AUGUST, 1915

New Spiders from New England, XI

BY

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YALE UNIVERSITY PRESS
NEW HAVEN, CONNECTICUT
1915

THE TUTTLE, MOREHOUSE & TAYLOR CO.

NEW SPIDERS FROM NEW ENGLAND.

Eleventh Paper.

Since my last paper in these Transactions in 1913 several new species of spiders have been found in New England and are here described and named. *Theridion aurantium* has been known as a variety of *T. sexpunctatum,* with which it is often found. *Tetragnatha pinicola* has also been long known but has been considered a variety of *T. laboriosa.* *Linyphia limitanea,* a large and distinct species, was discovered simultaneously, in 1913, in Aroostook County, Maine, and in Newfoundland and may be a common spider north and east of New England. *Dictyna armata* is new to New England, having been found only in North Carolina by Banks. The other three new *Dictyna* have come from a general rearrangement of this genus. *D. brevitarsus* has been confused with *D. muraria* under the name *D. sublata* Hentz. *D. bicornis* is a distinct species found at several points along the seashore. *D. angulata* is a small species, related to *muraria,* found in the hills south of Boston. *Tmeticus rectangulatus* is another of the indistinct species allied to *T. entomologicus.* *Theridion sexpunctatum* is found to range across North America and to be as variable as other species of the Phyllonethis group. The variety of *Epeira labyrinthea* is very distinct in markings and spinning habits corresponding with its different habitat. The male of *Hahnia brunnea* and the new species *Theridion intervallatum* and *Sergiolus unimaculatus* are chance discoveries from much beating of bushes and sifting of litter on the ground.

Theridion intervallatum. new sp.

Male 1.5 mm. long. Abdomen nearly spherical and half larger than the cephalothorax. The cephalothorax is slightly yellow with an indefinite middle line between the eyes and the dorsal groove. The back of the abdomen is light at the sides and has a darker pattern in the middle consisting of four pairs of dark spots between which are opaque white spots and fine black dots of different sizes. On the under side the abdomen is dark at the sides and light in the middle. The sternum is light like the back of the cephalothorax. The legs are marked with small and irregular black spots near the ends and middle of each joint. The male palpi have the tarsus and palpal organ narrow with the tarsus twice as long as wide. At the end of the tarsus are a few stiff hairs twice as thick as the others. The palpal organ has the appendages small and simple, with the tube and two other processes lying side by side, pointing toward the end of the palpus. Figs. 1, 1a, 1b. Pl. I.

Intervale, N. H., July, 1913, Miss E. B. Bryant.

Theridion aurantium. new sp.

Female 3 mm. long; cephalothorax 1 mm. Male with cephalothorax as long as in the female, but much smaller abdomen. The cephalothorax is orange in both sexes, without any middle or lateral stripe, rarely in females dark gray. The legs are pale yellow in females and orange in males. The first leg of the male is two and a half times the length of the whole body. The abdomen of the female is commonly light gray with opaque white markings at the sides and in pairs along the middle. Black spots may also occur in one or more pairs, and in some individuals cover nearly the whole abdomen. Fig. 2, 2a. Pl. I. In males the abdomen is commonly pale, with a pair of black spots at the sides toward the hinder end, and these spots may be lengthened into a pair of stripes, or the whole back may be black. Fig. 2b, 2c, 2d. Pl. I. The mandibles of the male are so long that with the height of the head they are as long as the cephalothorax. They are not much spread apart at the end, and have a thick tooth half as long as their diameter, only a short distance from the claw. In some individuals there is a smaller tooth between the large one and the end of the mandible, but it varies in size and position, and is often absent on one or both sides. Fig. 2e. Pl. I. The mandibles are shorter and less divergent than in *sexpunctatus,* and less variable. The palpi of the male resemble closely those of *sexpunctatus.*

This species is swept from low bushes or sifted from dead leaves on the ground. Crawford Notch, Franconia Notch, Adirondacks, Aroostook County, Maine, Maine Woods, south to Portland, Maine, and Manchester, N. H., often in company with *T. sexpunctatum,* with which species it has been usually confused.

Theridion sexpunctatum. Em.

This species is now known across the continent to the Rocky Mountains, Vancouver and Sitka. The long mandibles of the male are found to vary in length and shape but without any relation to locality. The male mandible always has a large tooth on the inner side just beyond the end of the maxillae and the variable part is the distal end beyond this tooth. Sometimes this is as long as the basal part and tapering and divergent and it then has three or four teeth differing in size, position and number sometimes differing on opposite mandibles of the same individual. In others the distal part of the mandible is half as long as the basal and the teeth are very small. In others the distal part is still smaller. One from Sitka in the collection of Nathan Banks has mandibles like this but still shorter. Figs 3, 3a, 3b. Pl. I.

Tmeticus rectangulatus. new sp.

A translucent spider 1.5 mm. long, resembling *T. entomologicus* from Tyngsboro, Mass., 1911; *T. digitatus,* Em., from Ithaca, N. Y., Journal N. Y. Ent. Soc., 1914, and *T. acummatus,* Em., from New Jersey, Bulletin Am. Museum, N. Y., 1913. It differs from these species in the tibia of the male palpus, which is truncate and has three small teeth across the end. Fig. 4. Pl. I.

One male each from Mt. Mansfield, Vt., and Brunswick, Me.

Linyphia limitanea. new sp.

3.5 mm. long. Cephalothorax pale dull yellow with the edges darker and a dark band from the eyes backward to the dorsal groove. The legs are yellow, darker at the ends of the joints. The abdomen is pale, with a dark middle band divided into segments, the anterior one usually darker and the second lighter than the others. The sternum and under side of abdomen are yellow brown like the dorsal markings. The epigynum is covered by a slightly convex plate, twice as wide as long, and straight at the posterior edge through which the openings show as dark spots. The males have longer legs and darker coloring than the females. The male palpi have on the patella a long process somewhat like that of *L. phrygiana,* but longer and sharper and more curved inward at the tip. Fig. 5. Pl. I.

Found in a grove of spruce trees at Fort Fairfield, Me., Aug., 1913, and July, 1914, and by Miss E. M. Esterbrook at Stevensville Crossing, Newfoundland. Webs like those of *L. phrygiana.*

Epeira labyrinthea, Hentz, Bog variety.

This variety was found on the upper part of Mt. Lincoln, Colo., by F. C. Bowditch in 1877. In 1902, H. C. Britcher found it at Lunksoos, east of Mt. Katahdin, Me. My first acquaintance with it was in August, 1913, on the bog at Crystal, Me., where I found an old female with nests and eggs. The next year, July, 1914, I visited the same bog earlier in the season, and found both sexes. On this bog these spiders live in the stiff narrow-leaved grass, *Scirpus caespitosus,* growing about a foot high over the open parts of the bog. In July their nests are small, attached to two or three grass leaves drawn together, and differing from the typical labyrinthea nest only in having around it a smaller "labyrinth." At this time males have nests like the females. In August, after the females have laid eggs, the nests are enlarged and improved, and hang down from the bunch of grass leaves, held in place by strong threads extending in several directions to other leaves, often three or four inches distant. In the typical bush nest of labyrinthea (see photograph in Comstock's Spider Book, pages 464-465), the egg cocoons are attached outside the nest, sometimes partly united with it, but in the bog variety the cocoons are enclosed in the upper part of the nest, forming a cone of light brown silk on the outside of which are scattered lumps composed of the remains of insects and sometimes leaves from neighboring plants.

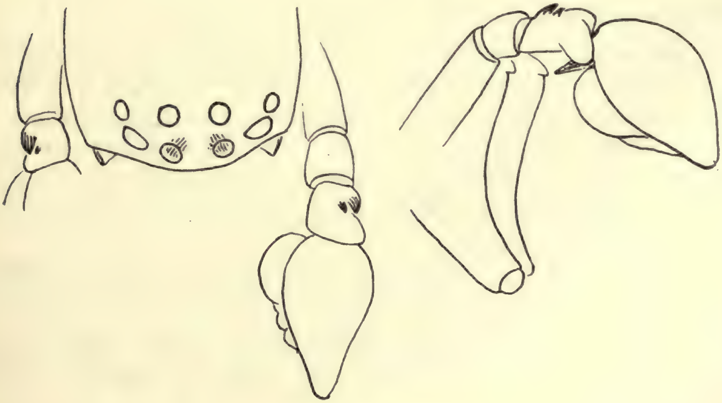
This variety differs from the usual labyrinthea in its deeper color and greater contrasts between the black and white markings.

The four white spots on the front of the abdomen are much larger and closely united into a light spot covering the whole front half of the back, while the markings of the hinder half unite into an equally conspicuous black spot. The dark markings of the legs are blacker and more sharply defined. These peculiarities are most evident in old females and least in males, which follow more closely the usual markings of the species. Figs. 6, 6a, 6b. Pl. I.

Tetragnatha pinicola. new sp.

This species resembles *laboriosa,* but is colored bright green with white stripes at the sides, and a red spot at the front end of the abdomen, sometimes continued as a red line on each side close to the white stripes. Immature individuals found at various times have been considered a green variety of *T. laboriosa,* but several adults, including one male, found on pines at Nantucket, in company with *laboriosa,* show several differences beside the color. The palpi of the male have the tibia half longer than the patella, and the tarsus and palpal organ are larger than in *laboriosa.* The legs are also longer than those of *laboriosa,* leg I being about one one-sixth longer. This is true of females as well as males. The arrangement of the eyes is as in *laboriosa,* the lateral eyes being perhaps a little closer together. Figs. 7, 7a. Pl. I.

Nantucket and Martha's Vineyard, Mass., on pine trees.



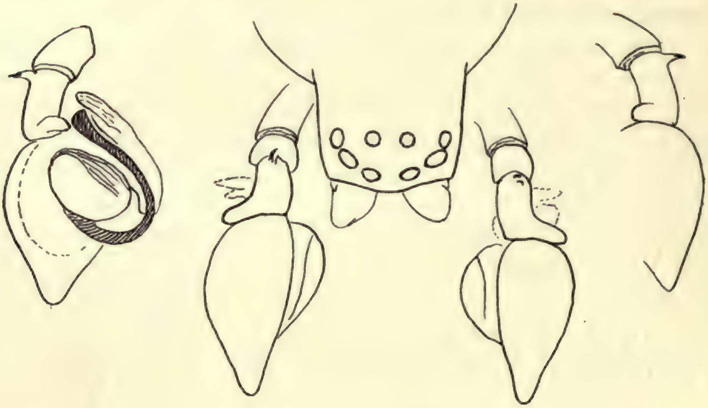
Dictyna brevitarsus

Dictyna brevitarsus. new sp.

2 mm. long and usually dark in color. The cephalothorax brown, darkest on the head. The legs the same color as thorax, but lighter, and the palpi darker. The abdomen is marked like *muraria,* with the middle mark of the front end distinct and less broken into spots than usual.

The mandibles of the male have a slight tooth at the base. The male palpi are of middle size, with the tarsus and tibia together as long as the mandible. The tibia is as wide as long, a little widened at the end. The two-spined process is at the side and directed forward. Figures page 139.

Danvers, Mass., Mt. Washington Glen, Ithaca, N. Y.



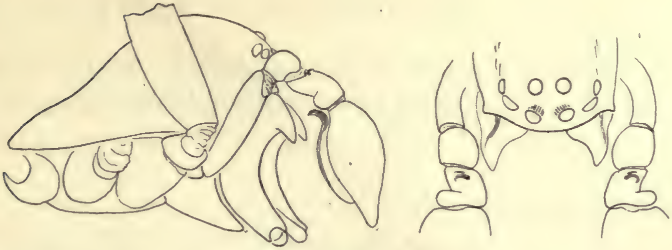
Dictyna angulata

Dictyna angulata. new sp.

2 mm. long; males and females the same size and colored alike. The general color is pale dull yellow, covered with light gray hairs. The legs are pale with no markings. The cephalothorax is yellow brown, lightest on the head. The abdomen has the usual middle gray mark, most distinct on the front half, dwindling to a fine line behind where it is more or less connected with a double row of partly united spots.

The male palpi are large, the tarsus as long as the mandibles. The tibia is a little longer than wide, and at the distal end as wide as it is long. The two-spined process is not more than a fourth as long as the tarsus, and on the upper side close to the base. Figures above.

Hyde Park, Mass., in leaves on the ground.

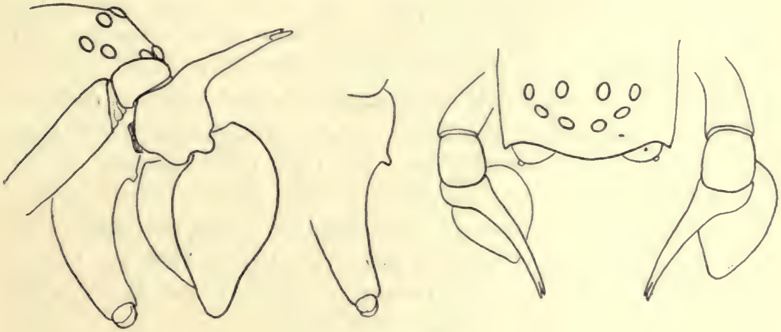


Dictyna bicornis

Dictyna bicornis. new sp.

2 mm. long. Pale; cephalothorax yellow brown; abdomen slightly marked with a few pale gray spots. The mandibles have a large tooth on the front. This tooth, which occurs as a very small point near the base in several species, here extends downward and is half as long as the claw of the mandible. The male palpi have the tibia and tarsus together as long as the mandible. The tibia is as wide as long and widened at the end on the outer side. The two spines near the base are sessile, one longer than the other. Figures above.

In plants on sandy shores at Ipswich, Mass., Ogunquit, Me., and Bayville, Long Island, N. Y., Banks Collection.



Dictyna armata

Dictyna armata, Banks. Proc. Acad. Nat. Sci., Phila., June, 1911.

Male 2 mm. long. Legs pale and translucent. Cephalothorax pale, a little darkened at the sides. Abdomen faintly marked with gray. The general appearance suggests a small *D. frondea.* The male palpi have a long spur on the tibia, extending forward at right angle to the tibia. The mandibles have a very small blunt tooth on the front, a third its length from the base of the mandible, Figures page 141.

Blue Hills, near Boston, in dry oak leaves. Banks found it in North Carolina in rolled leaves of Rhododendron lying on the ground.

Hahnia brunnea, Em. 1909.

The male of this species was found at Island Falls, Aroostook County, Maine, July, 1914, in moss in spruce woods. It resembles the female closely in size and color and in the spinnerets. The male palpi are large and differ conspicuously from those of the other species. The appendage of the tibia is large and in a flat coil on the outer side. The patella is large and thick on the upper side, and has no appendage, but the femur has a tooth on the outer side near the base turned upward and curved slightly inward. The tube is long enough to make two turns around the palpal organ. Figs. 8, 8a. Pl. I.

Several females were found in 1911 at Ithaca, N. Y.

Sergiolus unimaculatus,

Male 5 mm. long. Half as large as *S. variegatus* and more slender. The legs and cephalothorax are dull yellow without any markings. The abdomen is gray with a pale band across the middle. On the front end of the abdomen is a thickened spot narrowed behind and extending across the white band. Fig 9, Pl. I. On the under side the abdomen is dark gray at the end fading to pale toward the front like the under side of the legs, sternum maxillae and mandibles. The male palpi resemble closely those of *variegatus* but the process of the tibia is shorter, more sharply pointed and narrows more regularly from the base. Fig. 9b, Pl. I. The palpal organ is proportionally smaller but resembles that of *variegatus.* An immature female found at the same time resembles the male in color and form.

Lyme, Conn., from a damp field near the shore, Oct. 5, 1912.

PLATE I

1 Theridion intervallatum, markings of abdomen. 1a side of male. 1b male palpus, outer side. 1c male palpus from above.

2 Theridion aurantium. 2 and 2a two variations of marking of female. 2b, 2c, 2d variations of markings of males. 2c mandibles of male, 2f male palpus.

3 Theridion sexpunctatum, mandibles of a male from Crawford Notch. 3a mandible of male from Moosilauke. 3b mandible of male from Crawford Notch.

4 Tmeticus rectangulatus, head and palpi of male.

5 Linyphia limitanea, dorsal markings of female. 5a epigynum, 5b, 5c male palpus.

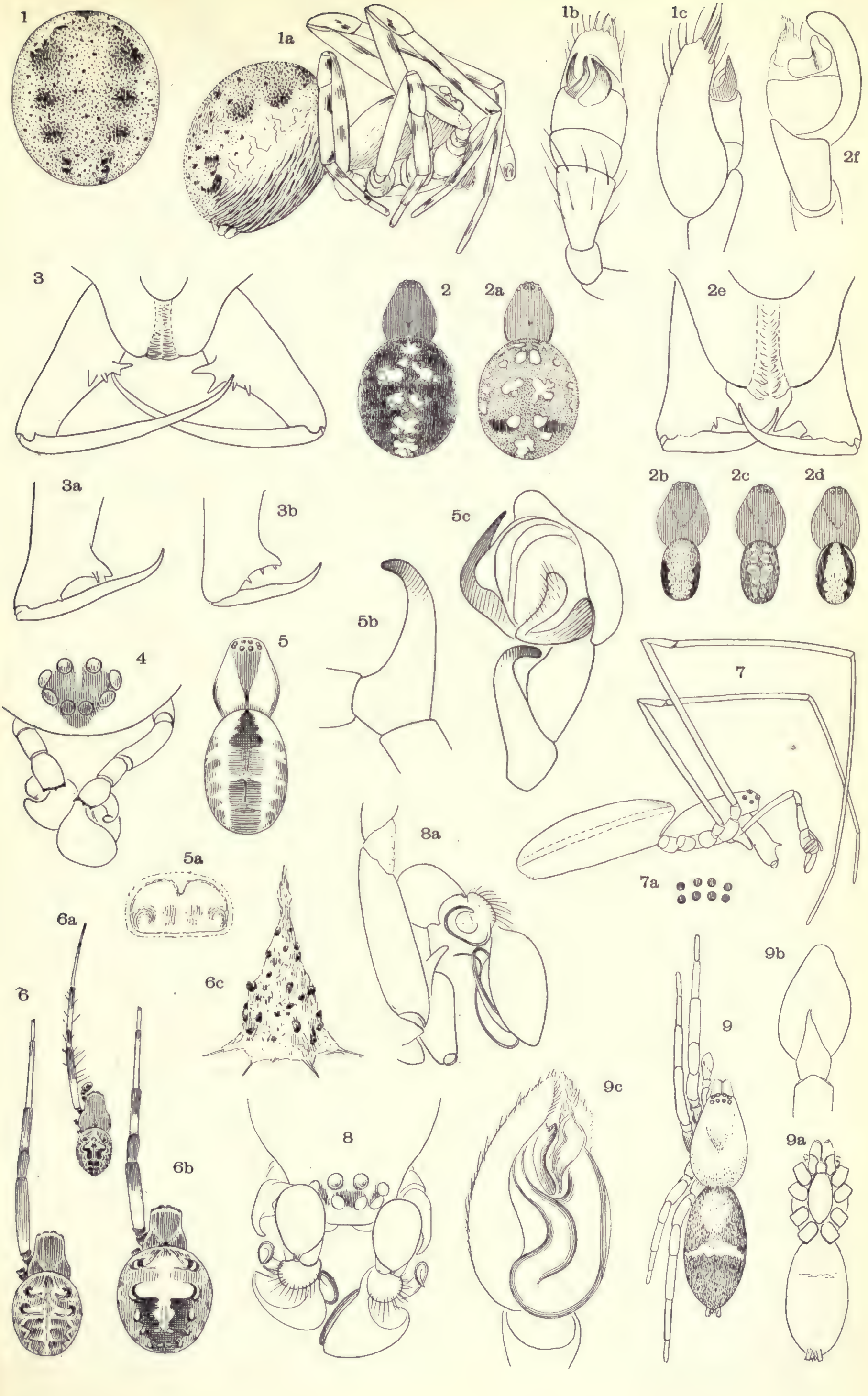
6 Epeira labyrinthea, usual markings of female. 6a male of bog variety. 6b female of bog variety. 6c nest from the bog at Crystal, Me.

7 Tetragnatha pinicola, side of male showing markings and length of legs and palpi. 7a arrangement of eyes.

8 Hahnia brunnea, head and palpi of male from above. 8a male palpus from side.

9 Sergiolus unimaculatus, back of male. 9a under side of male. 9b tibia and tarsus of male palpus. 9c palpal organ.

PLATE I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TRANSACTIONS OF THE
CONNECTICUT ACADEMY OF ARTS AND SCIENCES
INCORPORATED A. D. 1799

VOLUME 20, PAGES 145-160 AUGUST, 1915

Canadian Spiders, II

BY

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YALE UNIVERSITY PRESS
NEW HAVEN, CONNECTICUT
1915

THE TUTTLE, MOREHOUSE & TAYLOR CO.

NEW CANADIAN SPIDERS.

Second Paper.

The following paper is a continuation of one published in these Transactions in 1894 and like that is a description of a number of new species from various parts of Canada and from several collectors. The writer has made collections in the Rocky Mountains and across western Canada in two visits in 1905 and 1914. Mr. N. B. Sanson of the Banff Museum has made a small collection from the neighborhood of Banff. On the eastern side of Canada Dr. C. W. Townsend and Miss E. M. Esterbrook of Boston and Messrs. Leng and Englehart of New York have collected in Labrador and Newfoundland. In Maine and New Hampshire several species have been discovered known before only in western Canada. Several species are found to range across Canada from Labrador to the Rocky Mountains and the Pacific coast and many others are known in the Rocky Mountains and on the eastern coast without the connection between them having been discovered. *Tmeticus armatus,* Banks, described originally from Manitoba, is now known both in the Rocky Mountains and in Maine and New Hampshire. *Lophocarenum alpinum* of the White Mountains has been found at Banff. *Theridion zelotypum,* common in Maine, has been traced westward from Lake Superior in bogs along the edge of the spruce forest to the headwaters of the Athabasca River in the Rocky Mountains. *Linyphia nearctica,* (*humilis*) described from Laggan, is known to live all over eastern Maine and on the tops of the White Mountains and Green Mountains in New Hampshire and Vermont. *Theridion sexpunctatum* has been found at several points across Canada to Vancouver and Sitka on the west coast.

Theridion zelotypum, Emerton, Trans. Conn. Acad., 1882.

This species is now known all over Maine from Casco Bay to Fort Kent on the northern boundary, but has not yet been found south or west of Casco Bay. It was not found in a week's collecting around the Mt. Washington Glen from 1500 feet to the mountain top. Its westward range has been extended from Winnipeg to Prince Albert, Athabasca Landing and Jasper, Alberta, 4000 feet high in the Rocky Mountains on the headwaters of the Athabasca River. At all these places it lives as in Maine on low branches of spruce trees in open situations, but always near water or in bogs. All those found at Jasper and part of those at Athabasca Landing had the dorsal markings in a different pattern from those commonly found farther east. In these spiders the usual herring-bone middle stripe is entirely absent and the darker markings at the sides form two rows of spots with white lines behind them, in some cases entirely across the back. Fig. 1a. Pl. II. This species was not found on the prairie at Saskatoon or Edmonton, nor in the mountains around Banff or Laggan, nor in the Yoho Valley.

Theridion sexpunctatum, Emerton, Trans. Conn. Acad., 1882.

This species is now known across the continent from Maine to the Rocky Mountains, Vancouver and Sitka. The markings are usually very uniform, the thorax striped and margined with dark gray, and the abdomen marked with six or eight white spots in pairs on larger gray areas of irregular shape; but among some collected at Vancouver there are great variations, one female having the gray areas on the abdomen absent and the white spots without any regular arrangement, while another has the front half of the abdomen covered with a large dark spot like that of *Enoplognatha marmorata.* Figs. 2, 2a, 2b, 2c. Pl. II.

Tmeticus reticulatus. new sp.

Male 2 mm. long; legs and cephalothorax dull yellow, abdomen gray with faint light markings across the hinder half. The front middle eyes are small, near together and half-way between the mandibles and the top of the head. The upper middle eyes are farther apart than they are from the lateral eyes and between and below them is a cluster of hairs directed upward. On the front of the under side of the abdomen, between the lungs, the surface is marked with fine lines arranged in hexagons like a honeycomb. The male palpi have the tibia extending on the upper side over the tarsus with a short tooth turning downward and outward at the end. Figs. 3, 3a, 3b. Pl. II.

Lake Louise, Laggan, sifted from moss.

Tmeticus obtusus. new sp.

This is a little translucent spider, 1.5 mm. long, related to *T. entomologicus,* Em., Trans. Conn. Acad., 1911, *T. acummatus,* Em., Bull. Am. Museum, N. Y., 1913, and *T. digitatus,* Em., from Ithaca, N. Y., Journal N. Y. Ent. Soc., 1914. The plainest difference, as in all these species, is in the shape of the tibia of the male palpus. In this species the tibia is widened at the end, and has a shallow notch on the under side. On the upper side it extends over the tarsus in a flat process as wide as the patella, square at the end, and with a slight tooth in the middle of the outer side. Fig. 4. Pl. II. The palpal organ is very simple as in the other species. The eyes have the two middle pairs far apart, the upper pair about their diameter from each other, and the lower pair nearly touching each other.

Jasper, Alberta, in moss near the pond. Lake Louise, 1905.

Lophocarenum dentipalpis. new sp.

3 mm. long. Pale with head and ends of palpi a little darkened with gray. The head is elevated behind the eyes and has two humps rounded in front and extending forward at the sides of the upper middle eyes and a little beyond them. Between the humps are scattered long black hairs directed forward and between the upper and lower middle eyes are two rows of hairs directed outward. The head is narrow and rounded in front, and extends forward beyond the mandibles. The male palpi are large and complicated. The patella is longer than wide, and curved downward. The tibia is narrow at the base, from which it spreads in all directions over the tarsus. On the upper side of the tibia is a small black tooth attached on the inside and extending beyond the

rim over the tarsus. The tarsal hook is small and simple. The tube is long and slender, coiling in two turns around the end of the palpal organ. Figs. 9, 9a. Pl. II.

Goat Mountain, Jasper, Alberta, Canada, in the upper spruce trees in moss.

Lophocarenum alpinum.

Dismodicus alpinus, Banks, Can. Ent., 1896.

Lophocarenum alpinum, Em., Trans. Conn. Acad., 1909.

One male of this was found in moss in the woods on Sulphur Mountain, below the Alpine Club House. Fig. 7, Pl. II, shows the peculiar head and palpus. This species has been found three times on the upper part of Mount Washington, New Hampshire.

Lophocarenum erectum. new sp.

2 mm. long. Legs and palpi orange, cephalothorax brown, abdomen gray. Head of male elevated as in *pallidum* and *cuneatum,* with the upper middle eyes on top of the elevation turned a little forward. The tibia of the male palpus has a long hook, pointed outward over the back of the tarsus, as in *castaneum,* and on the upper side of the tibia is a slender process extending straight upward. Figs. 8, 8a. Pl. II.

Two males from moss in spruce woods near camp at Tackakaw Falls in Yoho Valley, B. C.

Gongylidium tuberosum. new sp.

3.5 mm. long. Brown, resembling *G.* (*Tmeticus*) *brunneus* and *maximus,* and in size and color *Pedanosthethus.* The head is low and the eyes small, the front middle pair one-half smaller than the upper middle. The mandibles have the claw groove toothed on both sides, but have no tooth on the front. The male palpi are short and stout, as in the related species. The tibia is but little modified in shape, and not widened at the end. The tarsus is round, with a notch in the edge over the tarsal hook. The hook is large and complicated, Fig. 5a, 5b, Pl. II, at the end turning sharply outward.

The female is of the same size as the male. The epigynum has a characteristic shape in three narrow lobes. Fig. 5. Pl. II.

Battle Harbor, Labrador, by C. W. Leng of N. Y., sifting moss for beetles.

Gongylidium canaliculatum. new sp.

3 mm. long, pale brown like *brunneus* and *maximus,* and resembling these species. The eyes are low and the head a little elevated behind them, more in the male than in the female. The mandibles have a row of small teeth on each side of the claw, but not the tooth on the front. The male palpi have the tibia widened at the end with a half-round notch above, from which a groove extends along the outer edge of the tarsus, ending in a notch. Fig. 6. Pl. II. The tarsal hook is simple, slightly flattened and curved in a quarter circle at the end. The epigynum shows two round opaque spermathecae at the sides and nearer the middle two dark ridges converging backward. Fig. 6a. Pl. II.

Prince Albert, Canada, from moss in a spruce bog, Aug. 24, 1914.

Bathyphantes arborea. new sp.

2.5 mm. long. Cephalothorax and legs pale yellow-brown, without any markings. Abdomen light on the back with a black middle stripe half its length and a black stripe on each side. The markings of the hinder half are small, usually disconnected, and sometimes absent. The light part of the abdomen is covered with opaque lighter spots showing through the skin. Fig. 10. Pl. II. The under side of the abdomen is dark gray with a light area on each side. The sternum is also dark gray, and the legs and maxillae pale. The epigynum is of the usual kind, projecting but little from the surface of the abdomen. Fig. 10b. Pl. II. The male palpi are small and compact, the tarsus and tarsal hook resembling somewhat those of *B. furcatus* from the Sandwich Mountains, New Hampshire. Figs. 10c, 11d. Pl. II.

Contrary to the habits of most of the genus, this spider lives in the driest of places in spruce trees high above the ground, in company with *Linyphia phrygiana;* Banff, Laggan, Yoho Valley up to 7000 feet.

Bathyphantes occidentalis. new sp.

2.5 mm. long. Cephalothorax pale yellow with dark edges and an indistinct dark square in the middle. The legs are pale with dark rings at the ends of the joints and middle of the tibia, the markings stronger in the female than the male. The abdomen has a wide middle band made up of transverse spots connected by a middle line. At the sides of the middle band are pale stripes indented on the outer side. On the under side the abdomen is black, broken by a row of irregular spots on the sides. Fig. 11. Pl. II.

The palpus of the male is of middle size with the tarsus elongated and furnished with a sharp curved process at the base, somewhat as in *B. furcatus,* Em., Trans. Conn. Acad., 1913. On the outer side is a smaller process near the base of the tarsal hook, as in several species. The tarsal hook is short and recurved, with a slender point turning at a right angle near the end. Fig. 11a.

The epigynum projects outward from the surface of the abdomen as in *furcatus,* but is not as large as in that species.

Vancouver, Canada, 2 males, 1 female.

Microneta pinnata. new sp.

Male 2 mm. long, without any markings; legs and cephalothorax pale yellow and abdomen gray. The head is high and extends forward as far as the front of the mandibles. The male palpi are large and complex. The tibia is widened on the under side. The horn of the tarsus is straight and at a right angle to the axis of the palpus. It has on the end a group of flat hairs cut at the end into two or three teeth. Fig. 1. Pl. III. The tarsal hook is slender and curved backward, with two points at the base and two at the end. The tube of the palpal organ is long and slender, coiled one and a half times, and supported by a thin flat appendage.

Prince Albert, Canada.

Microneta flava. new sp.

2 mm. long, pale, and without markings; male and female of the same size and general appearance. The male palpi are large and but little darker in color than the rest of the body. The tarsal hook is curved in several different directions, shown in the two figures. At the base it is divided into two branches, the lower one slightly turned outward, and along the basal edge is a ridge, also turned outward. The end of the hook is turned at a right angle to the base, pointed at the tip, and with a ridge on the outer side, ending in a low tooth. Figs. 2a, 2b. Pl. III. The epigynum is of the usual kind, folded and projecting its diameter from the surface of the abdomen. Fig. 2.

One male and female sifted from moss near Lake Louise, Laggan.

Clubiona obtusa. new sp.

Male 4 mm. long and entirely pale. Head slightly narrower than the thorax. Mandibles half as long as the cephalothorax with two very short teeth above the claw and none below it. Fig. 4. Pl. III. The male palpi have a wide and flat process of the tibia extending a third its length over the tarsus on the outer side. Figs. 4b, 4c. Pl. III. The tarsus is oval, twice as long as wide, and the palpal organ resembles that of *crassipalpus.*

The female found at the same place has the mandibles a little shorter, with the two teeth over the claw a little larger, and four very small teeth under the claw. The epigynum resembles that of *rubra.*

Banff, Aug., 1914.

Singa campestris. new sp.

Cephalothorax 2 mm. long. Abdomen of male 2 mm. Abdomen of female 3 mm. or more. The cephalothorax is orange yellow, darker in males, and in both sexes with a distinct black patch around the eyes and backward about a quarter the length of the cephalothorax. In the females the abdomen has three light stripes varying in length and width. Fig. 3. Pl. III. In the male there are usually no stripes. In both the sexes the ends of the abdomen are darker than the middle, sometimes forming a definite pair of black spots at each end. The legs are orange yellow without any markings. The middle eyes are less than their diameter apart, but not as close as in *S. keyserlingi.*

In the male the second tibia is slightly thicker than the first and the spines on the inner side are thickened and short, not much over half the diameter of the tibia. On the first tibia the spines on the inner side are somewhat thickened and about as long as the diameter of the tibia. Fig. 36. Pl. III. Kenora, Edmonton, swept from long grass near ditches.

Pardosa albiceps. new sp.

Male 5 mm. long. Cephalothorax black with narrow white median stripe, widened slightly in front of the dorsal groove and narrowed from there to the eyes, where it widens so as to cover the whole top of the head between the eyes. There are very narrow marginal white stripes. The abdomen is dark with gray hairs and a light central marking divided indistinctly into a middle row of spots and pairs of smaller spots at the sides. Fig. 5. Pl. III.

The legs are pale with light gray bands. The femora are all pale with longitudinal stripes above and broken bands at the sides, two in the middle and one at each end of the joint.

The male palpi have the femur pale with dark stripes above like the legs. The patella white, tibia black, and tarsus black with a white tip. The tibia and tarsus are large and have long black hairs like *glacialis.* Fig. 5b. Pl. III.

The front of the head, mandibles, maxillae and sternum are black, the coxae pale, and the under side of the abdomen gray.

The female has the legs much more strongly banded than the male. The stripe on the cephalothorax is more widened in front of the groove, and does not have the narrow line to the eyes. The hairs on the head are finer and not as white as in the male. The dorsal markings of the abdomen are more distinct than in the male and the anterior light spot more prominent. The epigynum is long and narrow, the surrounding hard parts deeply indented at the sides. Fig. 5a. Pl. III.

Spray River, B. C., N. B. Sanson, July 4, 1914.

Pellenes sansoni. new sp.

Two males and a female have been received from the Banff Museum. One male and the female are dried, and preserve their markings and colors better than in alcohol.

The face of the male, Fig. 6, Pl. III, is marked with two bright red spots at the sides and partly over the front middle eyes. A white stripe partly surrounds the lateral front eyes and extends back to the dorsal eyes. A white middle stripe extends down between the front middle eyes and backward as far as a line between the dorsal eyes. Between the white stripes are two tufts of long black hair pointed up and forward. Just below the front eyes a few long orange-colored hairs turn toward the middle line and cross at the ends. Below the eyes the color is black, with scattered white faintly iridescent scales in the middle, becoming closer at the sides and forming two white patches of hairs. The edge of the clypheus is orange-colored. The mandibles are striped with three bands of white hairs between which the mandible is smooth and black. The palpi are brown with light orange or flesh color hairs at the base and on the outer side, and long white hairs on the inner side and especially toward the ends. The front legs differ only slightly from the others. The femora are light in front and dark behind. The light hairs white or light flesh color. Below the white color is a strip of orange marked with a few red hairs. The other joints of the legs are light above and below, and darker in front and behind. The second legs are like the first, but not as strongly marked, and the other legs are without definite stripes, but generally light above and below, with white or light flesh-colored scales and scattered black hairs.

The cephalothorax behind the eyes is black with a narrow white margin. The abdomen is black with an indistinct white basal line and a broken white middle stripe on the hinder half. Fig. 6a. Pl. III. The whole under surface is white or light gray, which shows from above along the sides of the abdomen.

The female is generally lighter than the male, with less black and more light flesh-colored gray. The face, Fig. 6c, Pl. III, has the whole area below the front middle eyes white, which narrows toward the sides and extends backward as a narrow white line along the edge of the cephalothorax. Above the eyes is a light gray area which extends backward as two wide stripes the whole length of the cephalothorax. Over each front middle eye is a small black spot. The sides and the middle of the cephalothorax are black. The mandibles are striped less distinctly than in the male with white and black. The palpi are covered with light gray scales and long gray hairs. The legs are all gray, mixed with fine black hairs. The abdomen has a light basal stripe, stripes at the sides, and a distinct middle light stripe broken into several spots. The under side is white or light gray.

The male palpi have the tibia and patella both very short. The process on the outer side of the tibia is as long as the body of the joint; it is narrow at the end where it divides into two points, the lower one longest. Fig. 6d, 6e, 6f. Pl. III. The tarsus is as wide as long. The bulb is ovate on the outer side and wide and slightly angular at the base. The tube starts in the middle of the inner side. The tarsus and tibia are covered above with long white or light gray hairs.

Found by N. B. Sanson along the Spray River near Banff.

Dendryphantes flavipedes, Peckham. Attidæ of North America, Trans. Wisconsin Acad., 1909.

The common Dendryphantes in August east of the Rocky Mountains at Banff, Jasper and Athabasca Landing, appears to be a variety of *D. flavipedes,* Peckham. It is about one-fourth larger than the typical *flavipedes* of Eastern Canada and Maine and the females are marked in the same way. In the males there is greater contrast between the light and dark markings and the white stripes are more sharply defined. The first and second legs do not have the black stripes which are characteristic of Maine specimens. The western variety agrees, however, with the type in the three white stripes between the eyes and in the long fork of the palpal organ.

On the Atlantic coast as far south as New Jersey there is another variety of *D. flavipedes* in which the stripes of the front legs are wanting and all the legs of the male are banded as in the female. See Bulletin American Museum Nat. Hist., New York, Aug., 1913.

PLATE II

1 Theridion zelotypum, usual markings of abdomen. 1a marking of females from Jasper and Athabasca Landing.

2 Theridion sexpunctatum. Three females and one male from Vancouver, B. C. 2 markings of the usual pattern. 2a pale variety with all markings indistinct. 2b unusual variation with dark markings united into one spot. 2c unusual variation of a male.

3 Tmeticus reticulatus, head and palpi of male. 3a profile of head of male showing hairs between middle eyes. 3b markings of skin of under side of abdomen near front end.

4 Tmeticus obtusus, male palpi from above.

5 Gongylidium tuberosum, epigynum. 5a, 5b male palpus showing complicated form of tarsal hook.

6 Gongylidium canaliculatum, male palpus showing groove on edge of tarsus. 6a epigynum. 6b mandibles of female.

7 Lophocarenum alpinum, head and palpus of male from Sulphur Mountain, Banff.

8 Lophocarenum erectum, head and palpi of male. 8a left palpus of male showing process of the upper side.

9 Lophocarenum dentipalpis, side of head and palpus of male. 9a top of head and palpi of male.

10 Bathyphantes arborea, dorsal markings of female. 10a, 10b epigynum. 10c, 10d male palpus.

11 Bathyphantes occidentalis, dorsal markings of female. 11a male palpus.

PLATE II

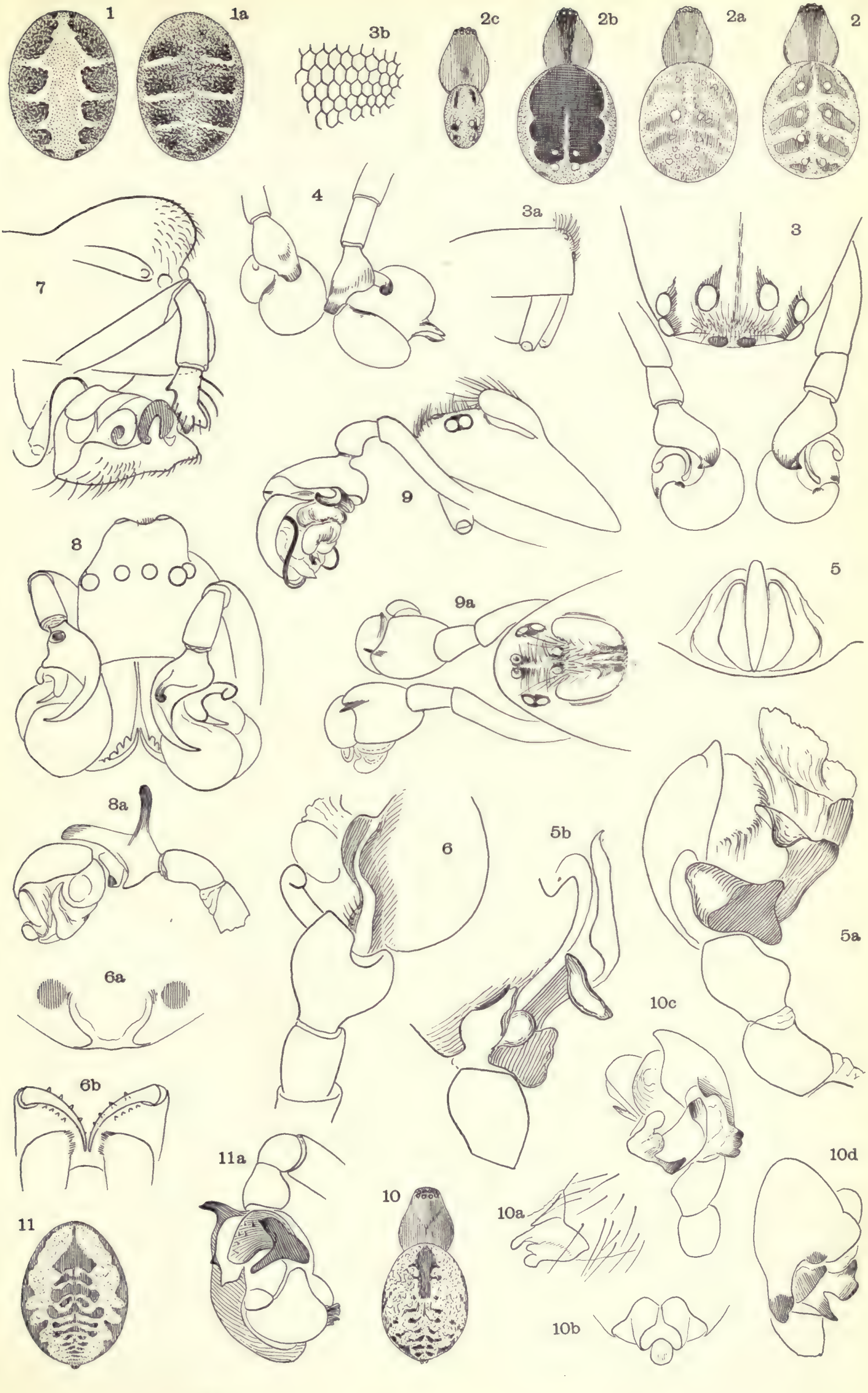
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PLATE III

1 Microneta plumosa, head and palpi of male. 1a right palpus of male from above.

2 Microneta flava, epigynum. 2a, 2b tibial hook of male palpus.

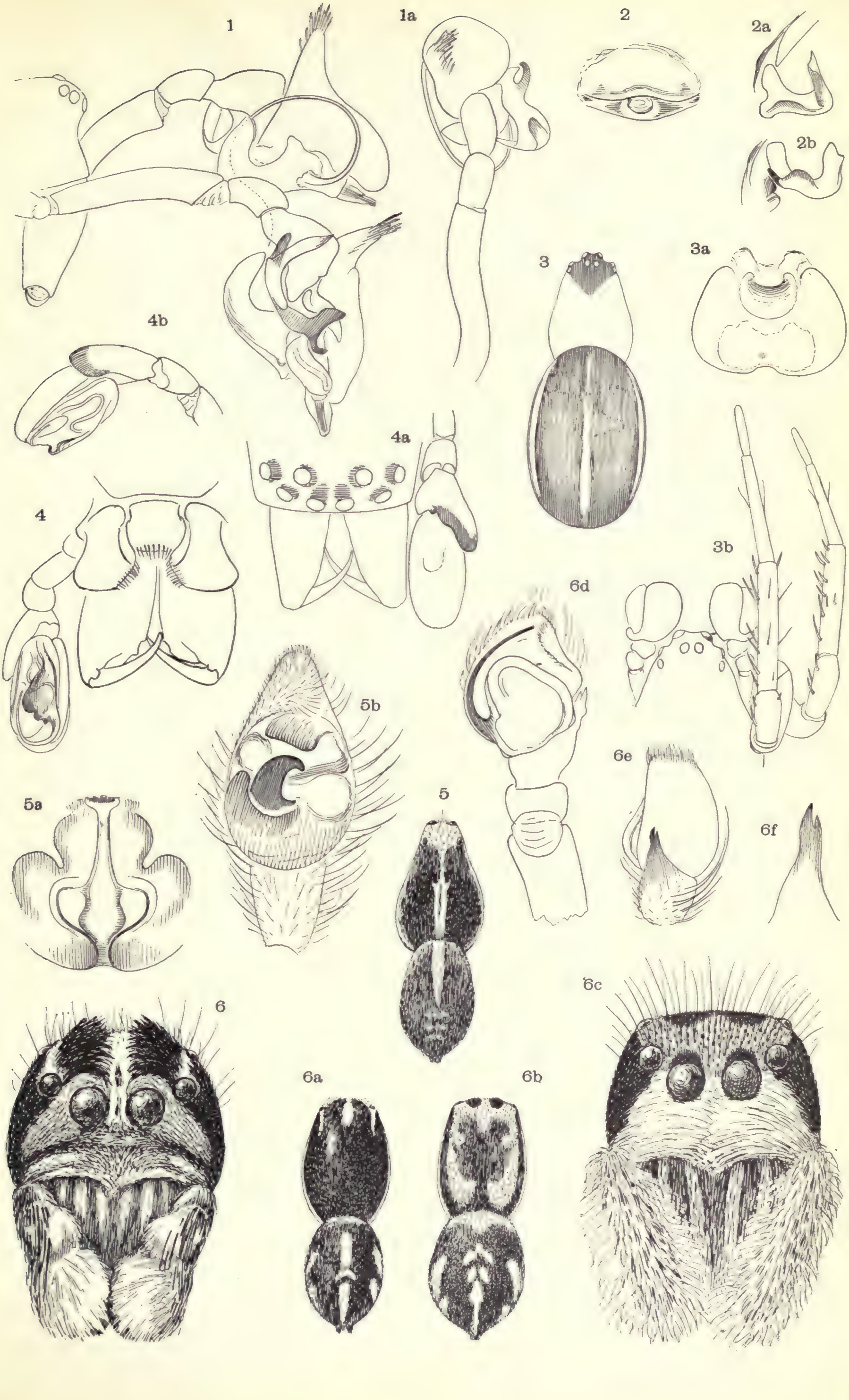
3 Singa campestris, dorsal markings of female. 3a epigynum. 3b head and legs I and II of male.

4 Clubiona obtusa, mandibles and palpus of male. 4a eyes and palpus of male from above. 4b male palpus from outer side.

5 Pardosa albiceps, dorsal markings of male. 5a epigynum. 5b male palpus.

6 Pellenes sansoni, front of head of male. 6a back of male. 6b back of female. 6c front of female. 6d male palpus and palpal organ from below. 6e male palpus, outer side with tibial process. 6f tibial process enlarged to show double point.

PLATE III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INCORPORATED A. D. 1799

VOLUME 20, PAGES 161-240 FEBRUARY, 1916

The Historical Background of Chaucer's Knight

BY

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IN YALE UNIVERSITY

YALE UNIVERSITY PRESS
NEW HAVEN, CONNECTICUT
1916

THE TUTTLE, MOREHOUSE & TAYLOR COMPANY

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I. CHAUCER AND HENRY, EARL OF DERBY

[The following titles are cited by the name or abbreviation which occurs first in the line:

Armitage-Smith, *John of Gaunt.*
Beaufort, *Karamania.*
Beltz, *Memorials of the Order of the Garter.*
Caro, *Geschichte Polens.*
Coulton, *Chaucer and his England.*
Emerson, in *Romanic Review.*
Gilbert, *History of the Viceroys of Ireland.*
Gower, ed. Macaulay.
Hales, *Folia Literaria.*
Hammer-Purgstall, *Geschichte des Osmanischen Reiches.*
Hammond, *Chaucer, a Bibliographical Manual.*
Hertzberg, *Chaucer's Canterbury-Geschichten.*
Heyd, *Geschichte des Levantehandels.*
Kirk, *Life-Records of Chaucer, Part IV.*
Kittredge, *Chaucer.*
Legouis, *Geoffrey Chaucer* (Eng. tr.).
Le Roulx, *La France en Orient.*
Lounsbury, *Studies in Chaucer.*
Machaut, *La Prise d'Alexandrie.*
Marco Polo, ed. Yule.
Meakin, *The Moorish Empire.*
Ramsay, *The Genesis of Lancaster.*
Rymer, *Fœdera.*
Skeat, edition of Chaucer, 6 volumes.
Stubbs, *Seventeen Lectures on . . . Mediæval and Modern History.*
Tatlock, *The Development and Chronology of Chaucer's Works.*
Treitschke, *Ausgewählte Schriften.*
Voigt, *Geschichte Preussens.*
Wylie, *History of England under Henry IV.*

Bibl. = *Bibliothèque de l'École des Chartes,* Vol. I.
Cronica = *Cronica de D. Alfonso el Onceno,* ed. Cerdá y Rico, 2d ed.
D. A. = *Derby Accounts* [*Expedition to Prussia and the Holy Land, made by Henry, Earl of Derby*], ed. Lucy Toulmin Smith.
Kervyn = Froissart, *Chroniques,* ed. Kervyn de Lettenhove.
S. R. P. = *Scriptores Rerum Prussicarum.*

An occasional *þ* and ȝ in the notes are printed as *th* and *y* respectively.

Sums of money expressed in dollars are computed on the basis of £1 = $75, the purchasing value of money being reckoned as fifteen times that of the present, according to the index-number which seems most generally accepted, without any attempt to demonstrate its validity.]

1. THE EARL OF DERBY'S RETURN TO LONDON IN 1393

On Saturday,[1] the 5th day of July, 1393, Henry, Earl of Derby, just returned from a sojourn of nearly a year[2] abroad, rode from Dartford to London,[3] the last stage of his journey from Canterbury. This was the fifth day since he left Canterbury, but he had rested over Friday, July 4, at Dartford, for reasons which we can only conjecture.

Though Derby had attained the age of 27 only about a month before,[4] he was the father of four sons[5] (besides one born in 1382, when Henry was not quite 16, and who died in infancy), and one daughter.[1] He was tall, delicate,[2] and knightly, but of consuming energy.[3] As his beard in later life was russet,[4] and his mother's hair was golden,[5] it is easy to infer that he was of the sanguine temperament. Chaucer describes John of Gaunt as having little hair upon his beard at the age of 24,[6] but we may well suppose that Henry's beard, at 27, was somewhat more developed.[7] His face was no doubt more or less pitted with the smallpox or some other eruption, from which he had suffered in 1387.[8] Altogether, with the toning down of pock-marks to freckles, he seems to have sat for the portrait of Emetreus in the *Knight's Tale*[9]:

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[1] As bases for the calculation, we may note that April 17, 1390, fell on a Sunday (Skeat 3. 373), and that Easter Sunday of 1393 was April 6 (*D. A.*, p. lxxvii).

[2] See the details in *D. A.*, pp. lxxii-lxxix.

[3] The route was his customary one. He had left Canterbury on July 1, and reached Sittingbourne (15 miles) the same day; on the 2d he was at Rochester (26 miles; the mention of Ospring, as of July 2, *D. A.*, p. 276, must be a mistake); on the 3d at Dartford (40 miles); cf. *D. A.*, p. lxxix. The same route was taken by Henry in the opposite direction, May, 1390 (*D. A.*, pp. xxvi-xxvii), returning about June 1. In 1413, his body was conveyed on a horse-bier from Gravesend to Canterbury (Wylie 4. 113). In the following June, Henry V traveled to Canterbury to attend a solemn obit in honor of his father, the stages being Kensington (13), Rochester (14), Ospring (15), Canterbury (16). Queen Isabella's stations in 1358 had been: London (June 6), Dartford (7), Rochester (8), Ospring (9), Canterbury (10); cf. Furnivall, *Temp. Pref.*, p. 14. Those of King John of France in 1360 were: London (June 30), Dartford (July 1), Rochester (2), Sittingbourne and Ospring (3), Canterbury (4); cf. Skeat 5. 415; 1. xix. The body of Henry V was to travel this way in 1422 (Ramsay, *Lancaster and York* 1. 305). In 1518 Campeggio traveled from Canterbury to London, starting on Monday, July 26, and arriving on Thursday, the 30th (Brewer, *Reign of Henry VIII* 1. 280); Henry VIII and Katharine went from London to Canterbury, May 21-25, 1520 (*ib.* 1. 345). Charles V and Henry VIII made the journey as follows in 1522: Canterbury (May 30), Sittingbourne (May 31), Rochester (June 1), Greenwich (June 2; *ib.* 1. 452). For maps and distances, see Littlehales, *Some Notes on the Road from London to Canterbury in the Middle Ages* (Chaucer Society, 1898).

[4] Born May 30, 1366 (Ramsay 2. 100; *Lancaster and York* 1. 1, and table opp. p. xlii; *D. A.*, p. lxxxi; otherwise Beltz, p. 237; *Dict. Nat. Biog.* Wylie 4. 166, 330-1, is uncertain.

[5] Henry V (1386), Thomas (1387), John (1389), Humphrey (1390).

> With Arcita, in stories as men finde,
> The grete Emetreus, the king of Inde,[10]
> Upon a stede bay,[11] trapped in steel,

---

[1] Blanche (spring of 1392). For the dates, see Wylie 3. 324, 326; 4. 133, 167; *D. A.*, pp. lxxxii, 107. 10; cf. Ramsay, *Lancaster and York* 1. 159, and Table I.

[2] Wylie 4. 134, 152; Ramsay (*Lancaster and York* 1. 141-2) calls him a neat, well-built, good-looking man of middle size.

[3] Wylie 4. 146.

[4] Ramsay, *Lancaster and York* 1. 142; Wylie speaks of his thick red beard (4. 125).

[5] Chaucer, *Bk. Duch.* 858.

[6] *Bk. Duch.* 456; John of Gaunt was really 29 at the death of Blanche in 1369, when Blanche herself was 28 (Armitage-Smith, p. 21), though Froissart (*Poésies*, ed. Scheler, 2. 8) says she was about 22 ('environ de vingt et deux ans').

[7] *K. T.* 1315: A 2173.

[8] Wylie 4. 152, 158.

[9] 1297-1328: A 2155-86.

[10] There is nothing in the *Teseide* to correspond with this portrait. Chaucer saw a good opportunity to introduce it, and modeled it upon the life, as perhaps in cases like the Wife of Bath (Coulton, p. 26, note) and the Host (Skeat 5. 129; Coulton, p. 149).

[11] It is difficult to say whether Henry is more likely to have ridden a bay or a white horse. Troilus sits on a bay steed (*T. and C.* 2. 624; cf. 1. 1073; 5. 1038), so that possibly the trait is conventional. White horses were in favor with the great. Chaucer may have seen (Emerson 3. 322) King John of France ride through London, in May, 1357, by the side of his captor, the Black Prince, mounted on a white steed (Kervyn 6. 18). Gower has a rout of ladies ride on fair ambling horses, white, fat, and great (*Conf. Am.* 4. 1306-10; cf. 1343). At the funeral of Arcite (*K. T.* 2031 ff.: A 2899 ff.), his arms were borne upon three steeds, great and white. At Griselda's home-coming, after her marriage, she

Covered in cloth of gold[1] diapred weel,
Cam ryding lyk the god of armes, Mars.

---

rides on a snow-white ambling horse (*Cl. T.* 332: E 388); and Dido, when about to ride hunting with Eneas, sits on a thick palfrey, paper-white, her red saddle being high-embossed with gold (*L. G. W.* 1198 ff.). When Richard II was reconciled with the city of London (*Pol. Poems and Songs,* ed. Wright, 1. 285), in August, 1392, he rode a snow-white horse (*niveo . . . equo*), and was presented before the Southwark bridge with 'a pair of fair white steeds, trapped with gold cloth, figured with red and white, and hung full of silver bells' (Strickland, *Queens of England* 2. 297). When his queen arrived, she received as a gift a small white palfrey, exquisitely trained (*ib.*). When the Greek Emperor, Manuel II, entered Paris on June 3, 1400, the King conducted him through the city on a white horse, richly caparisoned (Wylie 1. 160; Juvenal des Ursins, s. a. 1400), white, according to Gibbon (chap. 66), being 'considered as the symbol of sovereignty.' See also the white horses portrayed in manuscripts of the period: Harl. 1319 (Jusserand, *English Wayfaring Life,* frontispiece; cf. pp. 100, 117); Harl. 4379, f. 99 (Armitage-Smith, opp. p. 14); in the former they are ridden by noblemen, going forth to meet the future Henry IV, and in the latter by knights and ladies.

In 1387 Henry had paid $1000 for a gray courser (Wylie 4. 158). A white horse, or one spotted with white, being called Lyard (Wylie 4. 143, note 3), we may note that Henry owned in 1408-9 a Lyard Tidman, Lyard Moglyn, Lyard Fauconberg, in 1396 a Lyard Gilder, and some time between 1401 and 1406 a Lyard Bewley, Waltham, and Lumbard. On the other hand, in 1408-9 Henry had a Bayard Wimborne and a Bayard Bangor (Wylie, as above). In 1391 he paid $50 for a bay horse, and $25 to a messenger who brought Lord Darcy's gift of a bay courser (Wylie 4. 162). In May, 1390, he paid $375 for a white horse, and $250 for a bay, but also $250 for a sorrel (*D. A.,* p. 5).

While 'a fair price for a good horse would vary' from $110 to $300, much higher prices were exceptionally paid: Edward III had one that cost $9000, and Richard II one that cost $15,000 (Wylie 2. 237, note 5).

For Henry's choice of a white horse on an occasion of much ceremony, see note 3.

[1] On Oct. 12, 1399, the day before his coronation, Henry rode from the Tower to Westminster, dressed in a jacket, after the German fashion, of cloth of gold, mounted on a white courser (Kervyn 14. 226). For cloth of gold, see Wylie 1. 310; 2. 287, note 8; 3. 77, note 10, 247, 391; 4. 213. For gold Cyprus cloth, see Wylie 2. 423, 436, 444; 4. 161, 163, 168, 173, 174 (over $2000 in 1397 for a jacket of velvet, with Cyprus gold, embroidered with forget-me-nots), 175, 197, 213 (tent, in 1409, covered with gold Cyprus cloth), 215 (beds of), 221, 226, 239, 240; in May, 1390, Henry had a gown of gold Cyprus made (*D. A.,* p. xxxv). The horse-bier which conveyed Henry's body to Canterbury in 1413 was covered with cloth of gold (Wylie 4. 113).

His cote-armure[1] was of cloth of Tars,[2]
Couched with perles[3] whyte, and rounde, and grete.
His sadel[4] was of brend[5] gold newe ybete[6];

---

[1] Henry was fond of having his arms displayed on his travels. 'Considerable sums [were] paid for tables and scutcheons of Derby's heraldic arms, both on wood and paper, and for painting them. Lancaster Herald painted these arms at Prague, and again at Vienna, and much care seems to have been taken by the heralds to have these insignia always painted or hung in the lord's hall or room wherever he made a stay of any length' (*D. A.*, p. lvii, and index, p. 334, s. v. Arms in heraldry). 'He had eight tablets (*tabulæ*) painted with his arms and those of his knights and squires, and hung up in St. Mark's Church' (Wylie 4. 108, note), and a picture of the same for the church of St. George (*D. A.* 234. 24; cf. Wylie 4. 129, note 2). He would therefore not be likely to neglect his 'cote armure'; indeed he may have had his arms repeated on the caparisons of his horse, and elsewhere about his person, somewhat as represented in the picture of Sir Geoffrey Louterell (Coulton, opp. p. 194; cf. *Encyc. Brit.,* 11th ed., 13. 312). As his arms included the leopards (see p. 174, note 1) of the English shield, Henry would ride forth somewhat like Guillaume de Lorris' god of love (Chaucer, *R. R.* 893-4), painted

with losenges and scochouns,
With briddes, *libardes,* and lyouns.

When he wore his helmet, it would probably be with a plume of ostrich feathers, since his badge was two ostrich feathers Argent (Beltz, p. 242), and in 1393-4 he had his goldsmith make him two bushes for his helmet for the jousts at Hertford (Christmas) and at Westminster (Wylie 4, 164; cf. 4. 161). Even in Lithuania the guests of the Teutonic Order sometimes wore such plumes in their helmets (*Jour. Eng. and Germ. Phil.* 14. 382).

Froissart (Kervyn 7. 454) describes how the 'cotte d'armure' of Sir John Chandos led to his death in 1369 (tr. Johnes): 'He . . . was dressed in a large robe which fell to the ground, blazoned with his arms on white sarcenet, argent, a pile gules, one on his breast, and the other on his back. . . . As he marched, he entangled his legs with his robe, which was of the longest, and made a stumble,' etc. Cf. Ramsay 2. 4.

[2] Otherwise known as Tartarin. The *New Eng. Dict.* defines it as 'a rich stuff, apparently of silk, imported from the East, probably from China through Tartary.' It was of various colors—white, scarlet, blue, green (see Wylie's index, s. v. Tartryn, 4. 364). About 1410, Henry had four coats of arms made of satin and Tartarin (Wylie 4. 226).

[3] For Wylie's index, s. v. Pearls, see 4. 513.

[4] In 1391-2 Henry had a jeweled saddle (Wylie 4. 161); in 1395 one covered with red velvet (4. 169); in 1399-1400 one with green velvet and ivory carvings (4. 197); four saddles with velvet, garnished with gold cloth of Venice and fringe of silk and gold (4. 200); eight saddles

A mantelet[1] upon his shuldre hanginge,
Bretful of rubies[2] rede, as fyr sparklinge.
His crispe heer lyk ringes[3] was yronne,
And that was yelow,[4] and glitered as the sonne.
His nose was heigh,[5] his eyen bright citryn,
His lippes rounde, his colour was sangwyn,[6]
A fewe fraknes[7] in his face yspreynd,
Betwixen yelow and somdel blak ymeynd,
And as a leoun he his loking caste.
Of fyve and twenty yeer[8] his age I caste;
His berd was wel bigonne for to springe.
His voys was as a trompe thunderinge.
Upon his heed he wered of laurer[9] grene
A gerland[10] fresh and lusty for to sene.
Upon his hand he bar, for his deduyt,

---

with gold harness (4. 240); in 1403, palfrey-saddles with gilded harness (4. 222; cf. 2. 438).

[5] Burnished, brilliant; or, perhaps, refined by fire.

[6] Overlaid, inlaid, embossed, damascened, or embroidered (*New. Eng. Dict.*).

[1] Short mantle. In 1391-2 Henry had one of white cloth for Christmas (Wylie 4. 160; cf. 4. 162). Sixteen yards of white velvet are bought in 1391-2 for such a mantlet for Henry and his knights (*D. A.* 282. 13; cf. 234. 3). In 1520, at the Field of the Cloth of Gold, Francis I wore, over a short cassock of gold frieze, a mantle of cloth of gold covered with jewels—diamonds, rubies, emeralds, and large, loose-hanging pearls (Brewer, *Reign of Henry VIII* I. 353).

[2] See Wylie's index, 4. 529; and s. v. Balais, 4. 334.

[3] In the Frampton illumination, which has some 'claims to genuine portraiture' (Wylie 4. 121), Henry's 'hair is long and flowing.' Doyle gives a picture from MS. Harl. 1819 (*Peerage* 2. 316).

[4] See above, p. 167.

[5] When Henry's tomb was opened in 1831 (Ramsay, *Lancaster and York* I. 142), his nose was found to be 'elevated, with even the cartilage remaining' (Wylie 4. 125).

[6] See above, p. 167.

[7] See above, p. 167.

[8] See above, p. 166.

[9] In 1395 Gilbert Prince made for Henry a golden fillet with golden laurel-leaves, the leaves being made of gilded parchment. This was for a Tournament of Peace (Wylie 4. 170).

[10] In March, 1393, Henry bought at Venice a chaplet, or jeweled circlet, for $41 (*D. A.* 284. 8), and in 1400 had a chaplet with gold fretwork (Wylie 4. 196). Perhaps it was worn over a helmet, as in the effigies of Sir Hugh Calverley and the Black Prince (see Stothard, *Monumental Effigies*, pp. 77, 79).

An egle[1] tame, as eny lilie whyt.

---

[1] Though the eagle is sometimes to be found in pieces of goldsmith's work and embroidery done for Henry (Wylie 3. 103; 4. 162, 170, 195), and though he had an eagle on a seal which he sometimes used (4. 191), there seems to be no proof that he ever possessed a living specimen. Besides, since white eagles are not known, notwithstanding *T. and C.* 2. 926 (in a dream), and since Chaucer uses 'eagle' as a generic term (*Parl. F.* 332 ff., 450; cf. 330, 373, 393, etc.), covering the goshawk, the falcon, the sparrow-hawk, and the merlin, it is almost certainly the falcon that is here meant,

> The gentil faucon, that with his feet distreyneth
> The kinges hond.

Henry brought home a number of falcons from each of his longer journeyings (*D. A.*, pp. xxxiv, lxv, and indexes s. vv. Falcons and Hawks, pp. 340, 343). Some he received as presents from the Grand Master and the Marshal of the Teutonic Order, and from two other Prussians, the servants who bore them being rewarded with $50 each on two occasions, and with $100 on another (*D. A.* 107. 11; 108. 30; 111. 10). These latter must have been especially fine, not merely to call for such sums as rewards to the bearers, but also because the Order had a special school for falcons at Marienburg (Pederzani-Weber, *Die Marienburg*, p. 63), from which they sent choice specimens to their patrons in various countries, and among others to Richard II (Pauli, *Pictures of Old England*, p. 132). Margaret, Queen of Denmark, had sent tame gerfalcons to the Grand Master in 1389 (Voigt 5. 531), and similar presents came to him from other princes (Voigt 5. 552). On the other hand, in 1407 falcons were given by him to the King of France, the Dukes of Gueldres, Holland, Saxony, etc. (Voigt 6. 404). Those given to Henry might well include a white gerfalcon.

Of this there are two nearly allied species, the Iceland falcon (*Falco islandus*) and the Greenland falcon (*F. candicans*), the second being whiter than the first. These falcons have inconspicuous dark markings on the head and back, but are so nearly white as often to escape detection when sitting on the snow, with their pure white breasts turned toward the intruder (Knowlton and Ridgway, *Birds of the World*, p. 312; Newton, *Dict. of Birds*, p. 237; *Camb. Nat. Hist.* 9. 180. In the A-version of *Guy of Warwick*, ca. 1330-1340 (l. 823), a gerfalcon is called milk-white).

The poet's reason for representing the gerfalcon as an eagle may become clearer in the light of the fact that Henry, 'whom all the londe loved in lengthe and brede' (*Richard the Redeles*, ed. Skeat, Prol. 9), is figured in the last-named poem as an eagle (cf. Wylie 1. 19; *Pol. Poems and Songs*, ed. Wright, 1. 364, 365, 368; Clanvowe, *Cuckoo and Nightingale* 276), also called falcon (eagle, 2. 9, 145, 176, 190; 3. 69, 74, 91; falcon, 2. 157, 160, 166; 3. 87, 107). The canopy over Henry's tomb in Canterbury Cathedral is adorned with crowned eagles (Stothard, An hundred lordes[1] hadde he with him there,

Monumental Effigies, p. 82). Perhaps Chaucer was alluding to Henry's foreshadowed kingship in thus endowing him, as 'king of Inde', with the falcon (according to Juliana Berners, the gerfalcon belongs to a king).

How Henry prized an exceptional falcon is shown by the fact that he paid on occasion for a single one $250 (in 1387; Wylie 4. 158), $375 (in 1393; 4. 179), and even (for a sparrow-hawk) $1200 (4. 433); at Milan (*D. A.* 287. 10) he buys a great glove for *the* falcon (*le fawcon*). Froissart represents him as feeding a falcon at a critical moment (Kervyn 16. 232). In 1402 his son John is the king's master of the falcons (Wylie 4. 222), and in 1408 is master falconer of England (4. 209, cf. 210). Falcons, like eagles, appear in his goldsmith's work (3. 103), especially a white falcon on a green ground (4. 194), six white faucons d'or (4. 196), and a falcon of silver (*ib.*).

The falcon was an occasional badge of Edward III (*Richard the Redeles,* notes on 2. 9, 157; Palliser, *Historic Devices,* pp. 361, 371), as was also the eagle (Wright, *op. cit.* 1. 41, 46), and is associated with him in the following lines (85-98) from *Wynnere and Wastoure* (1347-8):

And als I waytted withinn I was warre sone
Of a comliche kynge crowned with golde,
Sett one a silken bynche with septure in honde,
One of the lovelyeste ledis—whoso loveth hym in hert—
That ever segge under sonn sawe with his eghne.
This kynge was comliche clade in kirtill and mantill—
Bery brown was his berde—brouderde with fewlys
(Ffawkons of fyne go[l]de flakerande with wynges;
And ichone bare in ble blewe, als me thoghte,
A grete gartare of ynde), girde in the myddes.
Ffull gayly was that grete lorde girde in the myddis:
A brighte belte of ble broudride with fewles,
With drakes and with dukkes—daderande tham semede
Ffor ferdnes of fawcons fete, lesse fawked thay were.

From Edward it seems to have passed to John of Gaunt, in whose privy seal, as used before 1371, two falcons appear as supporters (Armitage-Smith, p. 456). Perhaps in rivalry with John of Gaunt or Henry, it was also used by Richard II toward the end of his life, notably at the abortive Windsor tournament of 1399 (Kervyn 16. 151; Ramsay 2. 348; *Richard the Redeles,* end of note on 2. 2). It may be noted as a curiosity that Lionel, Duke of Clarence (cf. pp. 179 ff.) bequeathed by will a war-horse called Gerfalcon.

As Troilus escorted Criseyde toward the Greek camp (5. 65-6),

With hauke on hond, and with an huge route
Of knightes,

so Henry rides forth here.

---

[1] A poetical round number. Henry had been traveling with seven knights, ten esquires, two heralds, and some twenty-five to thirty valets

Al armed, sauf hir heddes, in al hir gere,
Ful richely[1] in alle maner thinges;
For trusteth wel that dukes, erles, kinges,[2]
Were gadered in this noble companye,
For love, and for encrees of chivalrye.

---

and servants (*D. A.*, pp. liii-liv). From the accounts covering the early days of July, we are led to infer a considerable retinue. Thus there appear to have been bought, for July 2, 3, and 4, seventeen bushels of oats, which, if we allow six quarts a day to each horse, would provide for thirty horses three days; what proportion of this, if any, was used for sumpters, we can hardly say. At Rochester, on July 2, there were purchased: white bread for over $13; wine for nearly $60 (say 15 gallons); beer, 18 gallons; salt for $1.25. The very next day were purchased: white bread for nearly $17; wine, over 30 gallons; beer, 23 gallons; to say nothing of three whole sheep, etc. How many men, on the basis of the Rochester purchases, will drink 60 quarts of wine and 72 quarts of beer in one day? Miss Bateson speaks of a quart of each per head daily at a somewhat earlier date (*Mediæval England*, p. 314).

The number of this retinue of course affected the speed of Henry's movements. Lucy Toulmin Smith says of the journey from Canterbury to London (*D. A.*, p. lxxi): 'This was slow traveling for a man who was accustomed to move rapidly, but it was perhaps a stately progress and welcome home to the popular young earl after the long and difficult pilgrimage.' In general, according to the same authority (p. lxxxiii), 'he moved along with considerable retinue and state', for (p. lxxx) 'he was one of the most important princes in England, moving among the flower of knighthood of his time, at home and abroad,' (*ib.*) 'grandson of Edward III,' (*ib.*) 'heir to the great wealth of his maternal grandfather, Henry, the first Duke of Lancaster,' (p. lxxxi) 'able to command a large following of knights and gentlemen.' That he might have traveled more rapidly is clear, since in 1415 Henry V journeyed by the following stages: London (July 30), Dartford (31), Rochester (31), Canterbury (Aug. 1), returning thus: Canterbury (Aug. 2), Sittingbourne (2), Rochester (2), Dartford (3), London (3); so Wylie, *Reign of Henry the Fifth*, p. 95, who remarks that this proves conclusively 'that in the summer, at any rate, the pilgrimage could be managed in two days and one night on the road.' King John of France, in 1357, took a day for each of these stages—Canterbury to Rochester, Rochester to Dartford, Dartford to London (Kervyn 6. 18). Cf. p. 166, note 3; Tatlock, 'The Duration of the Canterbury Pilgrimage' (*Pub. Mod. Lang. Assoc.* 21 (1906). 478-485).

[1] In *T. and C.* 2, 625, Troilus was

Al armed, save his heed, ful richely.

[2] Poetically raised from the knights and squires who actually accompanied him.

Aboute this king ther ran on every part
Ful many a tame leoun and lepart.[1]

---

[1] Henry had brought with him a leopard ('ounce or chetah', Wylie 4. 108, note) from the East, perhaps from Cyprus (*D. A.*, p. lxv.).

His arms were (Beltz, p. 242): 'France and England, quarterly, over all a label of five points Azure, each point charged with three fleurs-de-lis'; otherwise described (Harris Nicolas, *Scrope and Grosvenor Controversy* 2. 166) as being, in 1386, 'Gules, three lions passant gardant in pale Or, a label Azure, charged with fleurs de lis Or' (cf. Armitage-Smith, p. 458; *Archæol.* 31. 365; Doyle, *Peerage* 2. 317; Wylie 4. 170). Richard the Lion-hearted had borne three leopards in his shield (*Encyc. Brit.*, 11th ed., 13. 312; Palliser, *Hist. Devices*, p. 358), which afterwards took their place in the arms of England, the lions passant gardant of England being blazoned as leopards (through confusion) until far into the fifteenth century (*Standard Dict.* s. v. Leopard; cf. *Encyc. Brit.*, 11th ed., 13. 325).

The leopard, if we may judge from the poem *Wynnere and Wastoure* (ca. 1347-8), which refers to the Order of the Garter, was peculiarly associated with Edward III, for not only does he bear (76-80) leopards in the arms of England on his gorget (?), but also a golden leopard on his helmet (70-75):

Upon heghe one the holt ane hathell up stondes,
Wroghte als a wodwyse alle in wrethyn lokkes,
With ane helme one his hede—ane hatte appon lofte;
And one heghe one the hatte ane hattfull beste—
A lighte lebarde and a longe, lokande full kene,
Yarked alle of yalowe golde in full yape wyse.

It may be significant that Edward III had a present of a lion and a leopard from the Black Prince, who sent them from Gascony in 1365 (Devon, *Issues of the Exchequer*, p. 184), the leopard perhaps a tame one, such as were employed in southern Europe in the chase of bears, wolves, and wild boars (Kervyn 1.[1] 326). The Black Prince speaks in his will of his leopard-helm (*heaume du leopard;* cf. Stanley, *Hist. Mem. of Canterbury*, 10th ed., pp. 154, 169); and gilt leopards' heads, on a blue enameled ground, occur on the girdle of his effigy, while another adorns the pommel of his sword (Stothard, *Mon. Effigies*).

It is not surprising, in the light of these traditions of the royal line to which he belonged, that Henry was eager to bring home from the hither Orient a specimen of the royal beast. He may also, as Miss Smith suggests (*D. A.*, p. lxv), have wished to add a leopard to the collection of wild beasts already kept in the Tower since the days of Henry I (cf. Kirk, p. xiv; Loftie, *Hist. of London*, 1853, 2. 146), besides thinking of the leopard's symbolical significance.

Henry's leopard had to have a special keeper (*D. A.* 246. 20, 25, 31; even leopard-*men* are spoken of, 247. 15), and horses to draw them both (251. 22; 252. 20; 253. 1; 255. 34; 256. 14). A cabin had to be made for

2. CHAUCER AND HENRY'S RELATIVES

Thus accoutred, and thus accompanied, Earl Henry, on Saturday, the 5th of July, 1393, rode past Greenwich, where Chaucer had probably resided since 1385,[1] with practically no public employment since 1391.[2] Here, as Legouis says[3]: 'He had had many opportunities of watching those motley cavalcades [of Canterbury pilgrims] go by. . . . He had only to describe these pilgrims, each with the appurtenances of his rank and his individual traits.'

That Chaucer was delighted to see Henry in his state, both because of the poet's relations to various members of Derby's family, and because of his attitude toward the earl himself, there can be little doubt. Taking first the older members of the latter's family, we may consider his grandfathers:

(1) *Edward III.* Chaucer was attached to the king's army for the invasion of France in 1359, and the king contributed

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him on the galley which brought him to Venice (229. 3), and a mat bought for him at Treviso (240. 15). He consumed six sheep in about a month (231. 10, 13, 19; 232. 9; cf. 229. 3, 29; 230. 18; also 233. 18; 235. 8); but also required oil (245. 25), oil and spices (258. 1), spices, $50 worth (229. 5), and spices and unguents (246. 23)—even, on one occasion, but where we do not know, *wax candles* (163. 8), the Latin entry being: 'Clerico speciarie per manus custodis leopardi pro candelis cereis emptis pro leopardo, iiij d. ob.' [4 1/2 d.]. Just when it was necessary to obtain a parcel from the apothecary for him (Wylie 4. 170) is not known (1393 or 1394), but Wylie assigns it to 1394 (4. 108, note).

Henry's interest in leopards is indicated in many ways. When king, he had a keeper of his lions and leopards (Wylie 1. 61). In 1393 or 1394, after his return from the Holy Land, his harness-maker seems to have made him a seat for the leopard's saddle (*sege p. sell' leopardi*, Wylie 4. 164). As early as 1381-2, he has a satin cloak charged (embroidered ?) with gold leopards; in 1401 he has a silver boat, called an almsdish, with a leopard standing on the stem; and in 1406 a similar one embossed with seven leopards. It may be added that Henry V's herald, named from his master's coat, was Leopard Herald (*Encyc. Brit.*, 11th ed., 13. 325).

[1] Tatlock, pp. 138 ff.; Skeat 1. xxxv-xlii (§§26, 30, 32), and one-volume ed., p. xiii; Kirk, p. xxxiii; Legouis, pp. 15, 142-3; Chaucer, *Envoy to Scogan* 45.

[2] His duties as joint forester of North Petherton Park (Skeat 1. xl) can scarcely have occupied much of his time.

[3] Legouis, p. 143; cf. Skeat 1. xlii, and one-volume ed., p. xiii; Tatlock, p. 141.

$1200 toward his ransom, which was effected on March 1, 1360.[1] Chaucer's wife, Philippa Chaucer, was 'doubtless named'[2] after Edward's queen. By 'themperour Octovien' (*Bk. Duch.* 368[3]; cf. 1314) Chaucer is understood to mean Edward.

In 1367 Chaucer was appointed valet, and in 1372 esquire, of the king's household; in 1372 he was a commissioner to treat with Genoa; in 1374 the king made him a grant of a pitcher of wine[4] daily,[5] and appointed him comptroller of the customs and subsidy of wools, etc.; from 1375-7 he was 'pampered by Edward III.'[6] Add that his father, John Chaucer, was in attendance on the king in an expedition to Flanders in 1338,[7] and was deputy to the king's butler in the port of Southampton in 1349.[8] Besides, Chaucer may possibly have alluded to the battle of Sluys (1340), one of the most memorable in the naval history of England, in the lines (*Prol.* 399-400):

> If that he faught, and hadde the hyer hond,
> By water he sente hem hoom to every lond,

for, in his account of this battle, so glorious for Edward, Minot (ed. Hall 5. 44-46) says of the English:

> Few of the Normandes left thai olive,
> Fone left thai olive, but did tham to lepe;
> Men may find by the flode a C on hepe.[9]

(2) *Henry, Duke of Lancaster* (?1299-1361). In the year before Henry's death, Chaucer had served in the French cam-

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[1] Skeat 1. xix; Emerson 3. 328, 355; Legouis, p. 6.

[2] Skeat 1. xx.

[3] Cf. Skeat's note, and see Emerson, p. 330, note 34.

[4] 2½ quarts.

[5] The average price from Oct. 27, 1376, to June 21, 1377, was 7.2173 pence = $2.25; thereafter, at 20 marks the year, 8.767 pence = $2.75.

[6] Legouis, p. 13.

[7] Skeat 1. xv.

[8] Kirk 4. xi, 145; Coulton, p. 13.

[9] Cf. Minot 5. 55-7, and Hall's note on 5. 45-6; Chaucer, *L. G. W.* 644. For the battle of Espagnols-sur-Mer (1350), see Nicolas, *Hist. Royal Navy,* 1847, 2. 108, where we are told of a Spanish vessel which had engaged that of the Prince of Wales, that as soon as the former surrendered, through the help of the Earl of Lancaster, whose men shouted, 'Derby to the rescue!' 'the whole of her crew, according to the barbarous custom of the age, were thrown overboard, "not one being taken to mercy."'

paign, where Henry had commanded one division (Edward III and the Black Prince being at the head of the two others), and had probably seen him more than once.[1] The immense reputation of Henry must have impressed Chaucer's imagination,[2] and the impression was surely deepened by Chaucer's late relation to Henry's daughter, Blanche, and her husband, John of Gaunt.

We may next pass to a consideration of the Earl of Derby's father and uncles, and, first, of his father:

(3) *John of Gaunt.* According to Armitage-Smith[3]: 'Far more important than his early apprenticeship in the trade of war was Richmond's first meeting with one who was to be through life his friend and intimate, Geoffrey Chaucer. It was at Christmas, 1357, that John of Gaunt and Chaucer first came to know each other. Before this the poet may have come under his notice in the King's household, but at the Christmas feast of 1357 they met in a more intimate manner, for both were staying at Hatfield in Yorkshire with Lionel, now Earl of Ulster in the right of his wife, Elizabeth de Burgh. Upon Chaucer's fortunes this meeting had a lasting effect, for the friendship of John of Gaunt secured to him the favour of the Court so long as his patron lived, and after his death the protection of the new dynasty.' In 1359 John married Blanche, who was to be celebrated in Chaucer's *Book of the Duchess.*[4] At the end of the same year, or the beginning of the next, John of Gaunt 'had taken his share of the skirmishes and raids on the march—at Rethel, where his friend Geoffrey Chaucer was captured,' etc.[5]

Perhaps in 1369 or 1370, Chaucer had written the *Book of the Duchess,* 'a tribute alike to the chivalrous love of John of Gaunt for Blanche and to the affection of the poet for his earliest patroness.'[6]

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[1] Emerson 3. 342, 355, 359.

[2] See p. 184.

[3] Pp. 10-11; cf. *Life Records III,* p. 99.

[4] Emerson thinks Chaucer was present at the wedding (3. 325, note 14).

[5] Armitage-Smith, p. 18; cf. Emerson, p. 340.

[6] Armitage-Smith, p. 76. 'Though John was afterwards twice married, gratitude to the memory of his first wife never failed: so long as he lived, the rites due to religion and affection were observed, and in his will the Duke's first injunction is that he shall be laid by her side' (Armitage-Smith, p. 77).

On June 13, 1374, John of Gaunt grants Chaucer $750 a year for life, for his own and his wife's services,[1] as on Aug. 30, 1372, he had granted the same sum to Philippa Chaucer, the wife, for the services that she had done and was to do to his wife Constance.[2] It should not be forgotten that Philippa was probably the sister of John's third wife, Katharine Swynford,[3] so that, through this connection, Chaucer's (probable) son, Thomas Chaucer, could be called cousin by Henry Beaufort (?1375-1477), John of Gaunt's second son by Katharine Swynford,[4] and Chaucer's great-great-grandson was at one time heir-apparent to the throne of England.[5]

About 1379 may perhaps be dated Chaucer's *Complaint of Mars,* made, according to Shirley, at the command of John of Gaunt.[6] Whatever their intimacy may or may not have been in the later years of Chaucer's life, Coulton is justified in speaking of John of Gaunt as Chaucer's best patron,[7] and Armitage-Smith in saying: 'Posterity has never forgotten the debt owed by Chaucer and English literature to the Duke of Lancaster.'[8]

(4) *Edward, the Black Prince* (1330-1376). In the French campaign of 1359-60, Chaucer was in the division of the army led by the Prince of Wales.[9]

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[1] Kirk, p. 192.

[2] Kirk, p. 181 (cf. the king's annuity in 1366, p. 158).

[3] Skeat, p. li; Kirk, pp. xvi-xix, li-lvii, 334; Coulton, pp. 30-31; Armitage-Smith, pp. 389 ff., 451, 461-3; Wylie 3. 258-264; Stow, *Annales,* 1580, p. 548; 1592, p. 517; 1600, p. 527; Hammond, pp. 22 ff., 47-8; Kittredge, in *Mod. Phil.* 1. 5; Nicolas, in Aldine Chaucer (1880), pp. 44-50, 86-92, 113-4.

[4] Kirk, pp. lii, 334; Armitage-Smith, p. 389; Wylie 4. 313-4; *Dict. Nat. Biog.* 46, 55.

[5] Thomas had (1) daughter, Alice, who had (2) son, John de la Pole, Duke of Suffolk, who had (3) son, John de la Pole, Earl of Lincoln (?1464-1487), chosen by Richard III as heir, and slain in battle against Henry VII (Coulton, p. 73). Alice was a lady of the Garter in 1432 (*Dict. Nat. Biog.* 46. 55; *Encyc. Brit.,* 11th ed., 15. 857).

[6] Hammond, p. 384.

[7] P. 67.

[8] P. 413.—It is interesting, though not pertinent to this discussion, to know that a lineal descendant of the duke, through Prince Henry the Navigator, died in 1898, after being for twenty-five years the husband of an English wife; he was Antonio Manuelo Saldanha, Count of Lancastre or Alencastre (Countess of Cardigan, *My Recollections,* p. 160).

[9] Emerson, p. 337.

(5) *Lionel, Duke of Clarence* (1338-1368). Among the accounts of Lionel's wife, there are entries of the purchase of clothing for Chaucer, under April 4, 1357; of a payment to him May 20; and of a provision of Christmas necessaries for him Dec. 20, showing that Chaucer was then in the employ of Lionel.[1] In 1359 he must have been serving under Lionel,[2] who was attached to the division of the Black Prince. Toward the end of 1360 he was dispatched by Lionel from Calais to England as a bearer of letters.[3] Here ends our direct information with respect to Chaucer's connection with Lionel.[4] Kirk says (p. xv): 'Of Chaucer's life between 1360 and 1366 we have absolutely no information, but it seems quite certain that he was in the King's service during the greater part of that period, as he received an annuity from the King at the end of it.'[5] As a matter of fact, the next appearance of Chaucer's name is on June 20, 1367, when King Edward grants an annuity of twenty marks to Chaucer, 'pro bono servicio quod dilectus vallectus noster Galfridus Chaucer nobis impendit et impendet infuturum.' If Chaucer had been in the king's service between 1360 and 1367, as Kirk suggests,[6] and yet there is no mention of him as in personal attendance upon the king, where had these services been performed? The answer is almost ludicrously easy, though it rests upon a conjecture. In September,[7] 1361, Prince Lionel had gone over to Ireland as viceroy, accompanied by his wife,

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[1] Kirk, pp. xiii-xiv, 152-3; Bond, in *Life-Records III*, pp. 98 ff.

[2] Skeat 1. xviii; Ramsay 1. 435; Emerson, p. 337.

[3] Emerson, pp. 358, 361.

[4] Skeat says (1. xx): 'On July 1, 1361, Prince Lionel was appointed lieutenant of Ireland. . . . It does not appear that Chaucer remained in his service much longer; for he must have been attached to the royal household not long after the return of the English army from France.'

[5] Cf. Lounsbury 1. 59: 'Between 1360 and 1367 lies an exasperating blank in the poet's life, Not the slightest suggestion as to what was his occupation during that time can be derived from any quarter, beyond the inference that may be drawn from the language used in the subsequent gift of a pension, that he was employed in the king's service. But even of the nature of this service, and where it kept him, or whither it took him, we have nowhere the least inkling, when we have gone so far as to assume its reality.'

[6] Cf. Lounsbury, above.

[7] He arrived Sept. 15 (*Annals of Ireland*, in *Chartularies of St. Mary's Abbey, Dublin*, ed. Gilbert, 2. 395).

Elizabeth, and with an army commanded, under him, by the Earl of Stafford,[1] Edward III having written: 'Our Irish dominions have been reduced to such utter devastation, ruin, and misery, that they may be totally lost if our subjects there are not immediately succored.'[2] In November, 1366, he returned,[3] the crowning act of his viceroyalty having been the holding of the Parliament of Kilkenny on Feb. 18 of that year,[4] the statute of which was long regarded as a masterpiece of colonial legislation.[5] Now it is significant that on June 20, 1367, Chaucer received his annuity from the king. What more likely, then, than that he, whom Lionel had entrusted with dispatches for England a few months before the latter's departure for Ireland, should have been retained by his master during his residence in Ireland, and that the services performed there should have warranted recognition by the king on his return?[6] This conjecture is corroborated by the proof, adduced by Sypherd,[7] that Chaucer, when, in his *House of Fame*,[8] he described a house of twigs, had in mind the wicker dwellings made by the Irish of that period, though Sypherd himself does not draw the obvious inference.[1] Even Kittredge, who first directed Sypherd's attention to the Irish wicker houses,[2] still has no explanation, as late as the present year [1915], except the following[3]: 'Chaucer's erstwhile master, Prince Lionel, had lived in Ireland, and Chaucer knew scores of Englishmen who were familiar with Irish life.'[4]

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[1] Gilbert, p. 217; cf. Beltz, pp. 33-36. His chief officers were James, Earl of Ormonde, Sir John Carew, and Sir William de Windsor, whom Lionel left behind to represent him in 1366, and who married Alice Perrers in 1376.

[2] For a picture of warfare in Ireland at that time, see Kervyn 15. 167 ff.; Gilbert, pp. 221-4.

[3] *Eul. Hist.* 3. 241; cf. *Cal. Pat. Rolls* for Oct. 26, 1366.

[4] *Statutes and Ordinances, and Acts of the Parliament of Ireland*, ed. Berry, 1. 430.

[5] Ramsay 1. 488.

[6] If this be granted, there will result a curious parallel between the sojourns of Chaucer and Spenser in Ireland. The later poet, Chaucer's immediate successor in greatness, his disciple, and, so to say, his grave-neighbor in Westminster Abbey, was, like him, a courtier, a bearer of dispatches (as early as 1579, and perhaps in 1577; see *Dict. Nat. Biog.* 53. 387), and finally, by 1580, when he was about 28, an attendant upon the Lord Deputy to Ireland, during his stay in which he met and married his wife, and where he obtained material for his poetry.

[7] *Studies in Chaucer's House of Fame*, pp. 140-2, 151-4.

[8] 1936 ff.:

> And al this hous, of whiche I rede,
> Was made of twigges, falwe, rede,
> And grene eek, and som weren whyte,
> Swiche as men to these cages thwyte,
> Or maken of these paniers,
> Or elles hottes or dossers.

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[1] He says (p. 153): 'The evidence that has been presented shows the entire likelihood that the Irish wicker-houses were known in England. We may be sure that Chaucer would have been one of the first to hear about such interesting things. His connection with the household of Lionel must not be forgotten. Prince Lionel stayed in Ireland long enough to learn much of the social conditions of the people, and on his return must have told many tales of that wild country. Through him or through some of his followers, Chaucer, *though not then in his service* [italics mine], may have heard of these wicker-houses.'

[2] Sypherd, p. 141, note 1.

[3] *Chaucer and his Poetry*, p. 104.

[4] If Chaucer were still regarded as the author of Fragment B of the *Romance of the Rose*, another confirmation of our theory might be found in lines 3809-14:

> He was so ful of cursed rage;
> It sat him wel of his linage,
> For him an Irish womman bar.
> His tunge was fyled sharp, and squar,
> Poignaunt and right kerving,
> And wonder bitter in speking.

Here lines 3811-12 correspond to these in Old French, as quoted by Godefroy (4. 461) under *Herese, erese, irese, iresse:*

> Il fu fiuz [*var.* fiz] d'une vielle [*var.*
> vieille] irese [*var.* iresse],
> Si ot [*var.* out] la geule [*var.* langue] molt
> [*var.* moult] punese [*var.* perverse].

The lines corresponding to the English passage are, in Michel's edition (4126-9):

> Qu'il fu filz d'une vielle Irese,
> Si ot la langue moult punese,
> Et moult poignant, et moult amère;
> Bien en retraioit à sa mère.

Godefroy explains *ires(s)e* as a noun masc. and fem., meaning 'heretic', while Michel (and Skeat follows him) renders the word by 'Irlandaise,' and Méon translates it by 'full of ire.' Chaucer, at least in later years, would have understood the word, for in the *Legend of Good Women* 255-6: 329-330) he uses the corresponding abstract noun:

If, then, we may assume that Chaucer was with Lionel in Ireland during the whole or part of the period 1361-6, this would render probable Chaucer's journey with him to Milan in 1368, when the prince went to marry the daughter of Galeazzo II.[1] Already in 1598 Speght had said: 'Some write that he with Petrarke was present at the marriage of Lionell Duke of Clarence with Violant daughter of Galeasius Duke of Millaine: Yet Paulus Iouius nameth not Chaucer, but Petrarke he saith, was there. And yet it may well be.'[2] Skeat combats this, on the ground that Chaucer received his pension on May 25 of that year.[3] This, however, has been proved a mistake. The payment was indeed made on May 25, but not into Chaucer's own hands, as the receipts commonly run.[4] As Lionel, on crossing the Channel in April, 1368 (before the 16th, on which day he entered Paris), had a retinue of 457 men, what more natural than that Chaucer, if he had been in his service so long, and had deserved recognition of his faithfulness at the hands of the king, should have been included in the number?[5]

The arguments in favor of Chaucer's attendance upon Lionel are briefly these:

(1) Chaucer's apparently recent membership in Lionel's suite.

(2) The union with Violante was planned for before Lionel left Ireland, since on July 30, 1366, Humphrey de Bohun, Earl

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Thou hast translated the Romance of the Rose,
That is an *heresie* ageyns my lawe.

Hence it would seem to follow that, as the translator made a wrong rendering of *irese,* he must either have been some one else than Chaucer, or Chaucer before he was thoroughly acquainted with French, or Chaucer going out of his way to reflect upon the Irish character.

[1] Bond favored this view in 1866 (*Life-Records III,* p. 103); Furnivall saw 'no good outward reason' against it in 1875 (see note 4, below); and Lounsbury (1. 157), following Bond, remarks: 'It might almost be said that the discovery of Chaucer's previous connection with the household of Prince Lionel lends an air of probability to the statement.'

[2] Hammond, pp. 26-27.

[3] 1. xxiii; cf. Lounsbury 1. 156-7; Kirk, p. xv.

[4] Chaucer Society, Ser. 2, No. 10 (1875), p. 150 (Furnivall); *Athenæum,* Sept. 17-Nov. 26, 1898; *M. L. N.* 11. 210; 12. 1 (Mather).

[5] The notary who drew and sealed Lionel's will on Oct. 3, 1368, must have accompanied him from Ireland, since he was a clerk of the diocese of Meath (*clericus Miden' dioc'*); cf. Nichols, *Wills of the Kings and Queens of England,* p. 90.

of Hereford (1341-1373), whose daughter was to become the wife of Henry IV, was commissioned to negotiate for the marriage (Rymer), and on Jan. 19, 1367, the first draft of the marriage-contract was signed by Violante's father, Galeazzo (Rymer). Hence Lionel may well have been planning ahead for his trusted attendants.

(3) There is no evidence that Chaucer received his pension with his own hands on May 25, 1368 (see p. 182).

(4) In 1372 Chaucer was sent to Italy as an envoy to treat with Genoa,[1] suggesting some special knowledge or ability on his part.

(5) Chaucer was absent from London between May 28 and Sept. 19, 1378, in the retinue of Sir Edward Berkeley, sent by Richard II to negotiate with Bernabò Visconti and the English *condottiere,* John Hawkwood. As both of the latter were present to greet Lionel in 1368, we may discover in this some reason for Chaucer's being selected for the later mission, if he had seen them ten years before. And if Tatlock[2] is right in assuming that the mission of 1378 may have related in part to negotiations for a marriage between Richard and Bernabò's daughter, Caterina, this fact would tend to the same conclusion. As Chaucer may have been chosen to membership in this matrimonial commission partly because he had recently been employed upon similar business in France,[3] so he may have been selected for an embassy to the court of Milan in part because he was already acquainted with conditions and personages there.

(6) Froissart was certainly in Lionel's company on the journey. In his *Prison Amoureuse,*[4] dating from 1371, he describes as an eye-witness the reception of Lionel in Savoy in 1368, and in the *Buisson de Jonece,*[5] dating from 1373, he tells of the gift made to him by Lionel's host, Amedeus VI, Count of Savoy (1343-1383), at Milan, whence Froissart passed to Bologna, Ferrara, and Rome.[6]

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[1] Kirk, p. 181.

[2] P. 41.

[3] Kirk, p. xxviii.

[4] 363-4, 370-4.

[5] 339-347.

[6] Froissart had seen Lionel in 1361 at Berkhamstead, 28 miles northwest of London, as he himself tells us; cf. Kervyn 16. 142.

But if Froissart was of the company, why should not Chaucer have been? In their capacity as court-poets, both must have been on a somewhat similar footing. Chaucer had written mere poetic trifles, and Froissart had made no more than sketches for his great historical work. What he had done was to compose 'de beaux dittiers et trettiés amoureuse' for Philippa (d. 1369), Edward III's queen; and as these consisted largely of 'ballades, virelais, et rondeaux' (see, for example, the *Paradys d'Amour*), so Chaucer speaks[1] of having made 'balades, roundels, virelays,' or, as Gower says[2]:

> in the floures of his youthe,
> In sondri wise, as he wel couthe,
> Of ditees and of songes glade, . . .
> The lond fulfild is overal.

That Chaucer knew Froissart is rendered probable by their common affection for Blanche, wife of John of Gaunt (cf. *Book of the Duchess* with *Buisson de Jonece* 241-250), and by the fact that Chaucer, at the beginning of the *Book of the Duchess* (1-10), written within a year or so of Lionel's marriage, imitates the beginning of Froissart's *Paradys d'Amour,*[3] and derives the name 'Eclympasteyre'[4] from Froissart's 'Enclimpastair.'[5]

The companionship of the two on this journey has been assumed by notable scholars. Thus Kervyn (1.[1] 166): 'Le hasard avait réuni aux fêtes de Milan les esprits les plus éminents du XIV^{e} siècle, à qui trois langues, trois littératures durent leurs progrès et leur avenir, Pétrarque qui assouplit la langue encore inculte et rude de Dante, Froissart qui rendit également plus élégante, plus rapide celle de Villehardouin et de Joinville, Chaucer que Pope [Spenser], son imitateur, appelle le créateur du pur anglais.' And the Froissart scholar is followed by Petit de Julleville (*Hist. Lang. et Litt. Fr.* 2. 347): 'Deux poètes sont du cortège', etc. Add *Encyc. Brit.,* 11th ed., 11. 244.

(7) Chaucer (*Squire's Tale* 191-3) presents 'a stede of *Lumbardye*' as the model of a war-horse:

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[1] *L. G. W.* 411: 423.

[2] *Conf. Am.* 2943-5, 2947.

[3] Sandras, *Étude sur G. Chaucer,* p. 295; cf. Kittredge, in *Eng. Stud.* 26. 321.

[4] *Bk. Duch.* 167.

[5] *Paradys* 28; cf. Hammond, p. 364.

> For it so heigh was, and so brood and long,
> So well proporcioned for to ben strong,
> Right as it were a stede of Lumbardye.

This might possibly be a reminiscence of the present made to Lionel, at his wedding-feast, of six great coursers with saddles and equipments wrought in gold with the arms of Galeazzo and himself; or of the six great tilting-horses, with gilded bridles, and reins and caparisons of crimson velvet; or of the two splendid coursers, Lion and Abbot, presented to Lionel by his brother-in-law, Gian Galeazzo; or of the seventy-seven fine horses presented to the barons and gentlemen of the duke's retinue.[1]

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[1] If it were not too fanciful, one might suggest that the feast in the *Squire's Tale* had borrowed other features from the banquet offered to Lionel and his train; that Cambinskan stands for Galeazzo II, who also had two sons (though the youngest, if then alive, must have been an infant, since he could not have been born before 1366; cf. Magenta, *I Visconti e gli Sforza* 1. 68, note 2), and one daughter, Violante (Maria having died in 1362; cf. *Mon. Hist. Patr.* 3. 1336); that Elpheta is Blanche, Algarsyf is Gian Galeazzo, and Canacee is Violante; that 'twenty winter' (l. 43) is a round number; that the solemn and rich feast (l. 61) corresponds to the wedding-banquet, with its eighteen courses and elaborate dishes, the fifth course including herons (cf. l. 68; the 'strange sewes' of l. 67 perhaps representing the garlic-sauce of the sixth course); that the strange knight, 'al armed, save his heed,' (l. 90) suggests the knights that accompany 'the king of Inde' (*K. T.* 1322; cf. p. 167, above); that Gawain (l. 95) reminds us of *Sir Gawain and the Green Knight,* which (ll. 552-3) mentions Lionel and the Duke of Clarence (if we follow Mr. Isaac Jackson, *Angl.* 37. 395-6; but both names are already found in the French poem *Lancelot,* of the early thirteenth century, so that Lionel may owe both name and title to romance); that the Green Knight, in turn, suggests the Green Count, Amedeus VI (see p. 183, above), uncle of Violante, who had arranged for the marriage (Cordey, *Les Comtes de Savoie et les Rois de France pendant la Guerre de Cent Ans,* p. 183), entertained Lionel at Chambéry, convoyed him to Milan, and was present at the banquet; that as the Green Knight enters 'at the halle-dor' (*Gaw.* 136) on his green charger, to the sound of pipers and trumpets, so 'at the halle-dore' (l. 80) comes in the knight upon a steed of brass, while the king is 'herkninge his minstralles hir thinges pleye' (l. 78), and while no word is spoken, but all gaze in wonder (*Gaw.* 232. 242-4; *S. T.* 86, 88, 189-90); that the Green Knight drives (but this is found in other romances as well) to the 'heye dece' (*Gaw.* 222), as the other rides to the 'heighe bord' (85, 98), and there each addresses the king (*Gaw.* 256 ff.; *S. T.* 99);

(8) In the *Legend of Good Women* (A 354-5) we are told that a lord should

> nat be lyk tiraunts of Lumbardye,
> That usen wilfulhed and tirannye,

an evident allusion to the Visconti. This feeling may have in some degree been prompted or intensified by the feud between Galeazzo and the English after the death of Lionel in October, 1368, when they refused to give up the Piedmontese towns which constituted part of Violante's dowry, and Galeazzo attempted to take the towns by force. If this were the case, it might imply that Chaucer had remained in Italy till late in the year (and indeed there is no indication that he received his pension on October 31 with his own hands); on the other hand, the tyranny of the Visconti was a matter of common knowledge, and Chaucer would have had other opportunities—in 1372 and 1378—to acquaint himself with the condition of things in Italy. The passage on Bernabò in the *Monk's Tale* (409-16) could not, of course, have been written till after 1385, when Bernabò died; and one naturally associates that with the couplet from the *Legend of Good Women.*

It may be objected that, as we have the name of Philippa Chaucer, the poet's wife, in a document of Sept. 12, 1366,[1] this

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that Chaucer's knight (Lionel?) recites a message (l. 110) from 'the King of Arabie and Inde' (Inde, as in *K. T.* 1298, = England?), and afterwards dances (l. 277) with Canacee (Violante?); that Lionel is alluded to, by the name Leon (so in four manuscripts of Murimuth (Rolls Series, p. 87); cf. Hardyng: 'And in the feld a Lyon marmorike'), in the mention of a sign of the zodiac (l. 265); that there was plenty, for the most and least (l. 300), as we know there was at the banquet in Milan, where, Paulus Jovius assures us, the food carried away from the table would have sufficed for ten thousand men; that Canacee (l. 392) walks in the park (at Pavia, whither Lionel and Violante betook themselves after the wedding; see the map in Magenta, opp. p. 118), where (perhaps near the country-house of Mirabello; cf. Magenta I. 124) she finds a falcon (l. 411), such as Galeazzo prided himself on keeping in the park (Magenta I. 120-2); and that Cambinskan won many a city in his time (l. 662), as did members of the Visconti family—

> But al that thing I moot as now forbere;
> I have, God woot, a large feeld to ere,
> And wayke been the oxen in my plough.

[1] Kirk, p. 158.

is conclusive evidence that Chaucer could not have then been in the service of Lionel in Ireland. But this is to suppose that leaves of absence would, in the course of nearly six years, never be granted. That leaves of absence were granted, at least to the viceroy, is evident from the fact that robes were prepared for Lionel against the Feast of St. George, April 23, 1364, showing that he must have been, or been expected, in England at that time[1]; moreover, we have independent evidence that Lionel was absent from Ireland during portions of 1364-5-6,[2] when he left the Earl of Ormond and Sir Thomas Dale as his deputies.[3] It is by no means unlikely, then, that he should, on one or more of these occasions, have taken with him the capable squire whom he had had occasion, several years previously, to employ in a position of trust.[4] Nor is it impossible that Lionel may have sent him to England at least once during his residence in Ireland.[5] If Chaucer had thus returned to England, he might easily have taken opportunity to wed Philippa, or even have had time for a preliminary wooing.

It is no objection to this hypothesis that we ought to find Chaucer's name in the royal account-books for 1361-6, since we know that Lionel received lump-sums for the payment of his men—$100,000 at one time[1]—and must have kept his own accounts with them.

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[1] Beltz, p. 7.

[2] Ireland was then regarded by the English nobles, and the proprietors of lands in that island, as a place of exile (Gilbert, pp. 216, 218, 220, 233, 234, etc.), and Richard de Pembridge, for declining to accept the viceroyalty in 1371, was stripped of all the lands and offices which he held of the Crown (Gilbert, p. 232; cf. p. 233).

[3] Gilbert, p. 220. He was absent from April 22 to Dec. 8, 1364 (*Chartularies of St. Mary's Abbey, Dublin,* ed. Gilbert, 2. 396; *Cal. Pat. Rolls* 1364-7, pp. 11-13, 19, 21, 25, 34). On the other hand, it is clear that he was in Ireland (Ramsay 1. 453) when he was made Duke of Clarence in November, 1362.

[4] That Lionel traveled with a considerable retinue in 1364 is clear from the fact that on July 5 eighty ships were ordered to be got ready at Liverpool for his conveyance to Ireland (Rymer); according to a later order (Aug. 8), the vessels were to be between 30 and 80 tons. Some of the persons accompanying him are named in the *Calendar of the Patent Rolls* for 1364 (p. 34).

[5] On June 4, 1363, John Comyn receives a release, as being in the retinue of Lionel's wife; and on March 5, 1364, Lionel's daughter Philippa is sent to England (Rymer), of course with an appropriate escort.

As for the journey to Italy, Lounsbury is not justified in saying: 'There is positive testimony in the records that in 1368 he [Chaucer] was concerned in the war in France. This might not have prevented him from being in Italy at the time of the marriage ceremony; but it adds greatly to its improbability.'[2] The answer is that there was no war between England and France in 1368.[3] John of Gaunt did not land at Calais till July,[4] 1369, and was back by November[5]; in the mean time his wife, Blanche, had died (Sept. 12). Now Chaucer is listed among those following John of Gaunt who received a loan (in his case $750) at the beginning of the war in France, the account covering the period between June 27, 1369, and June 27, 1371.[6] Whether Chaucer actually crossed the Channel in 1369 we do not know; but between Feb. 13 and June 27 he received $75 for his summer clothes;[7] on Sept. 1 it was ordered that he should receive black cloth to wear at the funeral of Queen Philippa,[8] the list being headed by John of Gaunt; and on Oct. 8 he received his half-yearly pension.[9]

It is perhaps not without significance that Chaucer's appointment as sub-forester of the forest of North Petherton in 1390 or 1391 should have been made by Roger Mortimer, fourth Earl of March, grandson of Lionel,[1] and heir-presumptive to the crown after Richard II.[2] His father, Edmund, husband of Lionel's daughter, Philippa, was Viceroy of Ireland from 1380 till his death on Dec. 26, 1381.[3] The son, Roger, was made viceroy in January, 1381-2 (being then in his eleventh year), and continued nominally in this capacity till 1383.[4] Roger was again viceroy from 1395 till his death in 1398.[5] By Roger's widow, Eleanor,[6] Chaucer seems to have been made sole forester in the same year.[7] By Edmund, the fifth earl, son of Roger and Eleanor, the sub-forestership was granted to Thomas Chaucer[8] in 1416-7.[9]

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[1] Cf. the Issue Roll for Oct. 29, 1366 (Devon, *Issues of the Exchequer,* p. 188): 'To Lionel, Duke of Clarence, in money paid to him by the hands of Robert de Assheton, John Joce, and John de Hylton, for the wages of himself, his men at arms, and archers, retained by him in the war in Ireland, in the service of the Lord the King. By writ of privy seal. 1333l. 6s. 8d.' The second year after Lionel's death (June 18, 1370), a commission was appointed to audit the accounts—if we might once consult those accounts!—of Lionel's treasurers, one of whom was the clerk assigned to pay wages and fees in parts beyond seas to all persons of the duke's retinue (*Cal. Pat. Rolls,* 1367-70, p. 439). See also p. 189, note 3. John Joce (see above) was an esquire of the same rank as Chaucer in 1369 (Kirk, p. 174).

[2] 1. 157.

[3] Cf. Ramsay 1. 490 ff.

[4] Armitage-Smith, p. 72.

[5] Armitage-Smith, p. 74.

[6] Kirk, p. 176; cf. Emerson, p. 337, note 61.

[7] Kirk, p. 171.

[8] Kirk, p. 174.

[9] Kirk, p. 175.

The tradition, then, of Chaucer's services in Ireland under Lionel may well have lingered among the Prince's descendants, and have suggested in later times a reward to him and his.[10]

(5) *Henry's cousin, Richard II* (1367-1400), *son of the Black Prince.* Passing over Chaucer's official appointments and rewards during Richard's reign (1377-99), we note only the poet's *Parliament of Fowls,* probably written in 1381 to celebrate the betrothal of Richard with Anne of Bohemia.[11] See also Legouis' remarks (pp. 39 ff.) on the Prologue to the *Legend of Good Women,* and the Envoy to *Steadfastness.*

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[1] Skeat 1. xl; Kirk, pp. xxxix-xl; and esp. Selby, in *Life-Records III,* pp. 120-1.

[2] Wylie 1. 3; Ramsay 2. 229; Beltz, p. 41; Gilbert, p. 273.

[3] Gilbert, pp. 244-7. He had agreed to govern the colony for three years, upon 'being paid twenty thousand marks, in discharge of all his expenses, including those of the men-at-arms and archers, which he undertook to provide, but without being held to account to the Crown; and it was also stipulated that the King's revenue in Ireland should be expended according to his directions' (Gilbert, pp. 244-5).

[4] Gilbert, pp. 248-251, 273.

[5] Gilbert, pp. 273, 278.

[6] Beltz, p. 219; Gilbert, p. 273.

[7] Kirk, pp. xl, 291; *Life-Records III,* p. 118.

[8] See p. 178.

[9] Kirk, pp. xl, 291; Skeat 1. l.

[10] Selby (*Life-Records III,* p. 121) speaks of the 'friendly connection, extending over more than forty years, between the poet and the distinguished descendants of Prince Lionel and Elizabeth, Countess of Ulster.'

[11] Tatlock, pp. 41-44.

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Everything tends, then, to show, not only that Chaucer owed his offices to court-favor,[1] but that he was, as Professor Kittredge has said, 'a first-rate example of a "king's man."'[2] Legouis calls him 'a clever courtier, . . . for the sole merit of his verse could hardly explain the enduring favor which he enjoyed at court'[3]; and he adds (p. 20): 'Chaucer succeeded in winning for himself, and in keeping all his life, the protection, one might almost say the friendship, of John of Gaunt. The old king Edward III appreciated and loved him. Capricious Richard II gave him as constant a patronage as he was capable of, and, notwithstanding, the usurper Henry IV took him into favor from the time of his accession. Women, naturally partial to the poet of love, seem to have been particularly kind to him. There is every likelihood that the Duchess Blanche of Lancaster and Queen Anne of Bohemia were instrumental in obtaining many of the privileges he enjoyed.' Chaucer's reticence regarding matters of political concern—a mark of his prudence—has been touched on by Coulton,[4] and Skeat remarks[5] that 'perhaps it was not altogether without design that the poet, in his *House of Fame* [2. 647 ff.], took occasion to let the world know how he devoted his leisure time to other than political subjects.'

3. CHAUCER AND HENRY'S DEPENDENTS

Having considered Chaucer's connections with other members of royal and princely families, we now come to his relations with certain of the immediate dependents of Henry, Earl of Derby.

One of the latter was Otto (familiarly called Otes) de Granson, a nobleman of Savoy, who had received $2500 from John of Gaunt a quarter of a century before, had an annuity of $5000 from him in 1391-2, and was attached to Henry's second expedition (1392-3) at a higher salary than any one else, receiving over $5000 between Aug. 12 and May 31. A special cabin on the ship was built for him, Lord Willoughby, and others, and he was a member of an embassy from Henry to Jacques I of Cyprus in February, 1393. About that time his estates were confiscated, and on Nov. 18 of that year he received an annuity of $9500 from Richard II. He was killed in a duel, Aug. 7, 1397.[1] Between May 14, 1391, and May 14, 1392, he had presented a courser to Henry IV at Dartford, for which the servant whom he sent received a gratuity of $50.[2] This was the Granson to whom Chaucer, in his *Complaint of Venus* (1393),[3] imitated from the former's three balades,[4] refers in his last line as 'Graunson, flour [flower] of hem that make in France.' We thus find Chaucer, probably after the return of Henry, taking pains[5] to compliment a knight whom Henry had specially distinguished on his second voyage, and whom John of Gaunt had attached to his person long before.

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[1] Coulton, p. 59.

[2] P. 162.

[3] P. 19.

[4] P. 50.

[5] 7. xxiv.

Peter Bucton (or de Bukton), knight, and steward of Henry's household, was with him on both expeditions, that of 1390-91 and that of 1392-3. His ordinary salary was $3.75 a day, but on the *reyse* (Aug. 9-Oct. 31, 1390), and again from Nov. 24, 1392-June 30, 1393, it rose to $7.50.[6] He had an esquire, Robert Burton,[7] with two archers attending him from May 9 to June 3, 1390,[8] and a yeoman on the *reyse*.[9] He did not leave Henry until after the latter's return to London in 1393.[10] Chaucer, writing probably at the end of 1396[11] his *Lenvoy de Chaucer a Bukton,* calls him 'my maister Bukton.' He was mayor of Bordeaux as late as 1412, having perhaps been born about 1350.[12] Wylie calls him Henry's most attached and intimate friend.[13]

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[1] See the excellent note, *D. A.*, pp. 309-310, and *Romania* 19 (1890). 237-259, 403-448 (Piaget).

[2] Wylie 4. 163; *D. A.*, p. 309, note.

[3] Skeat 1. 86.

[4] Skeat 1. 400-404.

[5] Legouis (p. 54) says that Chaucer, in these closing lines, shows 'excess of deference.'

[6] *D. A.* 128. 7; 265. 15.

[7] *D. A.*, pp. 300, 303.

[8] *Ib.* 126. 12.

[9] *Ib.* 128. 7.

[10] *Ib.* 265. 17.

[11] Hammond, p. 367.

[12] *D. A.*, p. 300.

[13] 4. 142.

When at Prague on Oct. 22, 1392, Henry made oblation on the anniversary of the death of a son of Lewis Clifford, the father (born about 1336) having served with John of Gaunt at least as early as 1373. He was made Knight of the Garter in 1378,[1] and became an adherent of Wiclif, but finally recanted. In 1387 he was with John of Gaunt in Spain, though present at the Feast of St. George on April 23. He was at the jousts of St. Inglevert, as was Henry, in the spring of 1390, and joined the expedition against Mehediah in the same year. He died between Sept. 17 and Dec. 5, 1404.[2]

It seems to be generally agreed that Chaucer's *Lenvoy a Scogan* was written in 1393[3]; and we know that Scogan was at some time tutor to the four sons of Henry IV,[4] to whom he addressed a poem in the opening years of the new century.[5] This, then, is another link between Henry and Chaucer.

4. CHAUCER AND HENRY

As early as Feb. 19, 1386, Philippa Chaucer had been admitted to the fraternity of Lincoln Cathedral, together with Henry, Earl of Derby, Sir Thomas Swynford, and six others, in the presence of John of Gaunt, who, with Edward III, the Black Prince, and Lionel, had been admitted in 1343 (Hotspur was to join on Feb. 15, 1386-7).[6]

If it had been demonstrated that Chaucer was born at King's Lynn,[7] in Norfolk, he would doubtless have been interested in the fact that Henry's second expedition began at Lynn on July 19, 1392; but this is a hypothesis not generally received as yet.

So far, then, there seems to be no evidence that Chaucer had stood in personal relations with Henry. On the other hand, as bearing upon the heartiness with which Chaucer would be disposed to welcome Henry's return, we must remember the former's relations with the House of Lancaster, and especially with Henry's father, John of Gaunt[1]; his friendship with several of Henry's intimate dependents[2]; the fact that Chaucer had been without employment for two years, and that in all that time he had received nothing, in addition to arrears due him on account, except $750 from Richard II on Jan. 9, 1393, which, free liver as he seems to have been,[3] meant to him a state of destitution; and, finally, that Henry's star was in the ascendant.

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[1] Beltz, p. 261.

[2] Beltz, pp. 260-264; Wylie 3. 296; Armitage-Smith, p. 155; Le Roulx, p. 176; *D. A.*, p. 312; Kittredge, in *Mod. Phil.* 1. 11-13.

[3] Hammond, p. 393.

[4] Skeat 1. 82; 7. xlii; in both places Skeat makes the princes too young (see above, p. 166, note 5), for in 1407 Henry would have been 21; Thomas, 20; John, 18; and Humphrey, 17—so that the poem was probably written earlier.

[5] Scogan died in 1407.

[6] Kirk, pp. xxxiii, 257; Coulton, p. 59.

[7] Coulton, p. 15, note; *Athenæum* for 1908; *Acad.* 75 (1909). 425; Rye, *Chaucer a Norfolk Man* (Norwich, 1915), pp. 1 ff.

Everything seems to show, either that Chaucer had already been on exceptionally good terms with Henry, or else that he paid assiduous court to him on his return in 1393. Lounsbury, referring to Henry's gift to Chaucer on Oct. 3, 1399, three days after he had been declared king, says[4]: 'The rapidity with which this gift followed upon the accession of Henry IV to the throne seems almost to suggest a close personal tie between the monarch and the man of letters.'[5] But this was not the first patronage bestowed by Henry upon Chaucer after his return in 1393. Coulton, speaking of Chaucer's appeal in his last poem, remarks[6]: 'Henry was the son of Chaucer's best patron; and indeed the poet had recently been in close relations with the future King, if not actually in his service.' This alludes to Chaucer's receipt of ten pounds for payment to Henry, probably in 1395.[7] 'From this we may gather,' says Kirk, 'that he was in attendance on the Earl, and possibly retained in his service.' This view is confirmed by Wylie's statement[8]: 'In 1395, he received three ells of scarlet, cum furr' de Jonettes from Henry as Earl of Derby, the fur alone costing £8 8s. 4d.[9] (*i. e.*, 101 Jonettes at 20d. each).'

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[1] Cf. pp. 177-8, above.

[2] Cf. pp. 190-2, above.

[3] Coulton, p. 54.

[4] I. 90.

[5] Kittredge speaks (p. 33) of 'the easy terms on which Chaucer stood with King Henry IV.' Skeat, referring to Chaucer's *Complaint to his Empty Purse*, and the king's grant just alluded to, says (I. xlv): 'It must have given him real satisfaction to be able to assist the old poet, with whom he must have been on familiar terms.'

[6] P. 67.

[7] Between Feb. 1, 1395, and Feb. 1, 1396. Cf. Kirk, p. 342.

[8] 4. 136 note, 3.

[9] $630.

If Chaucer was in straits, and desired to approach Henry, he would have found every encouragement in the earl's affability. 'He made himself a name for friendliness among all with whom he had to do [on his travels]. To the Scots he was half-Scot, and to the Prussians he was a child of Spruce.'[1] 'In Paris [1398-9] . . . he was sweet, gracious, courteous, neighborly, and well-liked by all who knew him.'[2] 'The Greek Emperor Manuel [1401] . . . was fascinated with his politeness.'[3] 'With winning ways and good looks, inherited from his mother and grandmother, of whom Froissart says that two more delightful women he never met, it is no marvel that Henry captured all hearts.'[4]

If Chaucer paid court to Henry on his return from abroad in 1393, he was not the only poet to do so. The new prologue to the *Confessio Amantis* was written in 1392-3, not later than June, 1393[5]—that is, just before Henry's arrival. Thus Gower dedicates the new edition to Henry[6]:

This bok, upon amendment
To stonde at his commandement,
With whom myn herte is of accord,
I sende unto myn oghne lord,
Which of Lancastre is Henri named:
The hyhe God him hath proclamed
Ful of knyhthode and alle grace.

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[1] Wylie 4. 126.

[2] Wylie 4. 128.

[3] Wylie 4. 129-130.

[4] Wylie 4. 130-1. For the Londoners' attachment to him in 1397-8, and for his general popularity in England, see Froissart (tr. Johnes, Bk. 4, chaps. 94, 96, 102, 103, 104, 106, 110). Forty thousand Londoners thronged the streets on October 13, 1398, bitterly lamenting his departure from England (*op. cit.* 4. 96); the Mayor of London, with several prominent citizens, convoyed him to Dartford, and others even to Dover, where they saw him on the vessel that was to convey him to Calais (*ib.*). In fact, he left 'with the tears and regrets of half England' (Armitage-Smith, p. 404). Such affection is not the growth of a day, nor based on a single act; in part he was a sharer in the popularity of the House of Lancaster as the traditional guardian of the national liberties (Ramsay 2. 346), and his father has been described as for a dozen years the uncrowned king of England (Armitage-Smith, p. xxii; cf. p. xxviii).

[5] Gower 2. xxiii; cf. 2. 280, and marginal note to *Prol.* 24.

[6] *Conf. Am., Prol.* 83-89. With 89 cf. *Praise of Peace* 155.

Possibly it was the sense of rivalry with Chaucer for the favor of Henry at this time which led Gower to omit the tribute to Chaucer which was contained in the first version of his epilogue.[1] Henry's recognition of Gower's assiduity is probably shown by his gift of a collar to the poet in the autumn of 1393,[2] and his grant of two annual pipes of wine on Nov. 21, 1399.[3] But Gower's dedication quoted above was not his first compliment to Henry. Already in 1390 he had concluded the *Confessio* with this couplet:

> Derbeie comiti, recolunt quem laude periti,
> Vade, liber purus, sub eo requiesce futurus.[4]

The later dedication, however, is more flattering, and may, as Macaulay suggests, indicate 'that Gower had some discrimination in selecting a possible saviour of society.'[5] Whether Gower had been influenced by the prophecy, mentioned by Froissart,[6] that the descendants of the Duke of Lancaster should be kings of England, must of course be doubtful; but it is at least not impossible that Chaucer, who appears to have known Froissart,[7] should have laid it to heart. When Henry had become king, Gower dedicated to him his *Praise of Peace*.[8]

As we have seen, the circumstances were propitious for an interview between Henry and Chaucer. The poet had every reason to pay his homage to the prince, and the prince, as the sequel showed, was well affected toward the poet. On what various topics they may have conversed we can only offer conjectures, but they can hardly have failed to include Henry's visit to the tombs of Boethius and Augustine at Pavia,[9] and to that of his uncle Lionel,[10] now dead twenty-five years, in the same place, for all of these themes would have been welcome to Chaucer. Henry had visited each of these scarcely two months before.[1] Gian Galeazzo, whose sister Lionel had married, himself conducted Henry to the tomb of Augustine,[2] 'which', says Capgrave—but he was an Augustinian[3]—'he embraced, not without many thoughts' (*non sine magna contemplatione*).[4] Henry may also have talked about his visit with Wenceslaus, brother of Queen Anne, with whom he spent Oct. 21-24, 1392, at the king's hunting-seat of Bettlern, southwest of Prague[5]; and of that with another brother, or rather half-brother, Sigismund, King of Hungary, about Nov. 6, 1392.[6] He would surely have heard from Albert III of Austria,[7] brother-in-law of Anne, of his famous *reyse* in 1377, and the table of honor at which he had been present[8]; and the conversation might easily have turned to this, and to the exploits of Henry and his men at Vilna in the autumn of 1390, as detailed below.[9]

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[1] Cf. Lounsbury 1. 44 ff.

[2] Gower 4. xvi, note 7. The collar seems to have been valued at about $100.

[3] Wylie 4. 200.

[4] Gower 2. xxiii.

[5] Gower 2. xxiv.

[6] Kervyn 16. 235.

[7] See above, p. 184.

[8] Skeat 7. 205-216; Gower 3. 481-492.

[9] Chaucer himself may have seen these; cf. pp. 184-6, above.

[10] *D. A.*, pp. cxi; cf. Beltz, p. 131. Note that Henry's second son, Thomas (b. 1387), became the second Duke of Clarence in 1412.

5. HENRY AT THE SIEGE OF VILNA

An interesting episode in Henry's career, consisting of his voyage to Prussia, adventures there, and return, is detailed at length in Vol. 52 of the Camden Society, New Series (1894),[10] edited by Lucy Toulmin Smith. After lengthy preparations, and a false start, Henry sailed from Boston on July 19, 1390, reached Dantzic on Aug. 9, and Königsberg on Aug. 16. About a week later, the incursion (*reyse*) into Lithuania began, and Henry was back in Königsberg by Oct. 22. Here he remained till Feb.

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[1] *D. A.*, p. lxxvii.

[2] *D. A.*, pp. cxi, 277. 29.

[3] *D. A.*, p. lxviii.

[4] *D. A.*, p. cxi. As to Henry's interest in theology, see Wylie 4. 138. Augustine is referred to 22 times in the *Parson's Tale,* twice in the *Tale of Melibeus,* once in the *Nun's Priest's Tale,* and (as St. Austin) 5 times besides.

[5] *D. A.*, pp. lxiii, lxxxiii, 191-8, 310; Wylie 4. 139, note 11.

[6] *D. A.*, pp. lviii, lxxxiii, 195. 13.

[7] Nov. 4-7, 1392; cf. *D. A.*, pp. lix, lxxxiii.

[8] *Jour. Eng. and Germ. Phil.* 14. 380.

[9] See pp. 197-202.

[10] *Expeditions to Prussia and the Holy Land made by Henry, Earl of Derby* (=*Derby Accounts*).

9, 1391. On Feb. 15 he was at Dantzic, and about April 1 set sail for home.

As it is the *reyse* which most concerns the student of Chaucer, from its bearing upon *Prol.* 54, the subjoined translations from chroniclers of the period have been chosen for their illustration of this part of Henry's journey.

I

[Walsingham, *Hist. Angl.*, Rolls ed., 2. 197-8 (*D. A.*, p. cvi), tr. in Hakluyt, *Principal Navigations,* 1903, 1. 395.]

About the same time[1] L. Henry the Earle of Derbie travailed into Prussia [*Le Pruys*], where, with the helpe of the Marshall[2] of the same Province, and of a certaine king called Wytot,[3] hee vanquished

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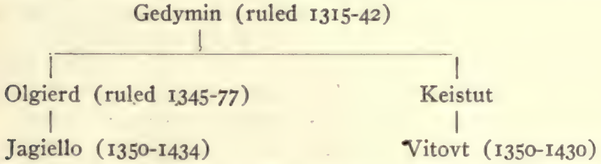
[1] Actually July 19, 1390, from Boston.

[2] Engelhard Rabe.

[3] Or Vitovt, who has been called 'the most imposing personality of his day in Eastern Europe' (*Encyc. Brit.*, 11th ed., 28. 762). He was the cousin of Jagiello (Yagiello), at this time King of both Poland and Lithuania. The relationships of certain important Lithuanian rulers may be seen from this diagram:



Throughout this general period, Poland, Lithuania, and the Teutonic Order (whose territory corresponded broadly to East Prussia) were in constant rivalry. Of these, Lithuania had remained most persistently pagan, notwithstanding a succession of efforts to Christianize it, or at least to bring it under the domination of professedly Christian powers. Poland had invited in the Teutonic Order (1208)—which had been founded in Palestine as a Crusading organization—for its protection against the savage Prussians, who were akin to the Lithuanians; but mutual jealousy had since arisen. Lithuania began to be a powerful state under Gedymin, at a time when Poland was in an anarchic condition. Poland grew much stronger during the reign of Casimir the Great (1333-1370), who had married Gedymin's daughter. During Olgierd's reign Lithuania grew at the expense of Muscovy and the Tatars, until it finally touched the Black Sea between the Bug and the Dnieper. Meanwhile Keistut, who ruled in Samogitia (now the government of Kovno), Troki, and Grodno, maintained a border warfare with the Teutonic Order, not unlike that carried on for several centuries between Scotland and England. Shortly before his death in 1377, Olgierd accepted

> the armie of the king of Lettowe, with the captivitie of foure Lithuanian Dukes, and the slaughter of three, besides more than three hundred of the principall common souldiers of the sayd armie which were slaine. The Citie also which is called Wil or Vilna (*Wille*),[1] into the castle whereof the king of Lettow named Skir-

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Christianity, but this had but little influence upon the fortunes of Lithuania. Jagiello succeeded Olgierd on the death of the latter, while Keistut remained in possession of his province. In 1380 Jagiello contracted a secret alliance with the Teutonic Order, an alliance which was aimed at his uncle Keistut. Two years after, he got Keistut into his power, and had him treacherously assassinated. No sooner was this done than the Teutonic Order, instead of leaving Jagiello in peaceful possession of his uncle's patrimony, raised up the latter's son Vitovt against him. However, Jagiello made peace with his cousin, and in 1386 became King of Poland by marriage with Jadwiga (*Hedwig*), heiress of the Polish crown. The consequence is well stated in the words of a competent writer, Robert N. Bain (*Encyc. Brit.* 21. 904): 'The transformation of the pagan Lithuanian chieftain Jagiello into the Catholic king of Poland, Wladislaus II, was an event of capital importance in the history of Eastern Europe. Its immediate and inevitable consequence was the formal reception of the Lithuanian nations into the fold of the Church. What the Teutonic Order had vainly endeavored to bring about by fire and sword for two centuries, was peacefully accomplished by Jagiello within a single generation, the Lithuanians, for the most part, willingly yielding to the arguments of a prince of their own blood, who promptly rewarded his converts with peculiar and exclusive privileges. The conversion of Lithuania menaced the very existence of the Teutonic Knights. Originally planted on the Baltic shore for the express purpose of Christianizing their savage neighbours, these crusading monks had freely exploited the wealth and the valour of the West, ostensibly in the cause of religion, really for the purpose of founding a dominion of their own, which, as time went on, lost more and more of its religious character, and was now little more than a German military forepost.' Moved by jealousy of Jagiello's brother, Skirgiello, whom the king had made Grand Duke of Lithuania, while Vitovt was merely governor of the principality of Grodno, the latter allied himself with the Teutonic Order in May, 1390.

[1] Built by Gedymin about 1321, and made his capital from 1323. It still has the ruins, on the summit of Castle Hill, of an octagonal tower of red brick, the remains of the castle built by Gedymin. On Feb. 17, 1387, 30,000 Lithuanians received Christian baptism at Vilna (*Encyc. Brit.*, 11th ed., 28. 766). In the cathedral of St. Stanislaus is the tomb of Vitovt. Vilna is situated on the river Viliya (or Nerya), which is hardly 200 yards wide, and flows through winding gorges or defiles, densely shadowed by fir and birch. It stands on the slopes of its hills, in a region of lakes, tangled forests, and almost impassable marshes. It is about 120 miles distant from the German frontier, and its population

galle [properly, *Skirgiello*] fled for his savegard, was, by the valour of the sayd Earle especially and of his followers, surprised and taken. For certaine of the chiefe men of his familie, while others were slouthfull or at least ignorant of their intent, skaling the walles, advanced his colours thereupon.[1] And there were taken and (*vel*) slaine foure thousand of the common souldiers, and amongst others was slaine the king of Poland his brother,[2] who was our professed enemie. And the castle of the foresaid Citie was besieged for the space of five weekes: but by reason of the infirmities and inconveniences wherewith the whole armie was annoyed, the great masters of Prussia[3] and of Lifland would not stay any longer. There were converted of the nation of Lettowe eight persons unto the Christian faith. And the master of Lifland carried home with him into his countrey three thousand captives.

II

[John of Posilge (*S. R. P.* 3. 164-7), in *D. A.*, pp. cvii-cix.]

In this year, before the Assumption of the Virgin [Aug. 15], the Duke of Lancaster (*Langkastel*)[4] sailed by way of Dantzic[5] to Prussia with some three hundred men,[6] and, after buying horses and making preparations, set out with the Marshal[7] on an expedition (*reyse*) to Vilna. . . . When he [the Marshal] learned that Skirgiello (*Skirgal*) lay with a force on the Nerya,[8] they planned to send the boats up the Memel, and let the extra horses and the common people go forward[9] with all speed, while they selected the best in the army, and made their way through the Wilderness above Kovno, where

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approaches 200,000, having nearly doubled since 1883. Recent events have brought it into prominence.

[1] A certain yeoman of Lord Bourchier's received $150 because he was the first to lay hold of Henry's banner on the wall (*D. A.*, pp. xxx; 105. 9; 302). A gunner-archer (name not given), who was on the wall in the presence of Henry, received $25 (*ib.* 105. 24). Others to receive special rewards for services before Vilna were several miners (*ib.* 105. 20) and engineers (*ib.* 106. 1).

[2] Korygiello, baptized as Casimir, in command of the upper house.

[3] The Grand Master, Conrad Zöllner of Rothenstein, was not present; see above, note 2.

[4] Of course an error.

[5] He was at Dantzic on Aug. 9 and 10 (*D. A.*, p. xxxvi).

[6] Lucy Toulmin Smith believes 150-200 would be nearer the mark (*D. A.*, p. xlv).

[7] Miss Smith thinks he came up with the marshal on Aug. 22, probably near Ragnit (*D. A.*, p. xxix).

[8] 'Near where the Nerya (Wiliye) falls into the Memel,' also called the Niemen (*D. A.*, p. xxix).

[9] 'With the vessels' (*D. A.*, p. xxix).

> Skirgiello lay and awaited them, without knowing that they were so near. So the Marshal came to a ford, and took Skirgiello by surprise. . . . Many of his people were cut off at the ford, and three dukes and eleven boyars were made prisoners, and sent home to Prussia. There were also taken two hundred saddled horses. All this happened on St. Augustine's day [Aug. 28]. From here the Marshal set out, when the ships had arrived and made ready, for Vilna. And they made two bridges over the Nerya, and besieged the house with three divisions: the Livonians, with one army; Vitovt, with the Samogitians and Lithuanians, of whom many had resorted to him, as the second; and the Marshal, with those from Prussia, as the third. On September 4 they arrived at Vilna, and set up their bombards, catapults, and mangonels, and stormed the upper house[1] vigorously, so that they gained possession of it. From this house over two thousand persons were captured and slain, and the fire was so great that they perished there all together, for inside were many goods, and the people from all about had fled thither, and piteous it was how they all burned. The other houses[2] were well manned, with artillery and bombards, and they defended themselves so valiantly that those without lay there five weeks, lacking two days, and yet could not gain the other houses. In the besieging host there was plenty of fodder, and no lack of meat and flour, which the Lithuanians and Samogitians brought in; one could ride away from the army for six miles round, and take what was needed without hindrance. . . . Finally, the powder was all shot away and other things used up, so that it was necessary to withdraw. The Lord of Lancaster from England was there, having a large number of good archers[3] who acquitted themselves right well, and he right

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[1] The wooden, oldest, or crooked house (Caro 3. 99).

[2] Two in number. These were walled or built with stone (*D. A.*, p. xxx). The Annals of Thorn have (*D. A.*, p. cvii): 'Ceperunt primum castrum Vilne non muratum, et interfecerunt multos, sed murata castra non obtinuerunt' (*S. R. P.* 3. 164 ff.).

[3] Sienkiewicz says (*Knights of the Cross* 2. 260): 'There are no better archers on earth than the English unless those of the Mazovian wilderness; but the Mazovians have not such good bows as the English. An English arrow will go through the best armor a hundred yards distant. I saw them at Vilno. And not a man of them missed, and there were some who could hit a falcon while flying.' Elsewhere (2. 23) he speaks of 'the unerring English archers who pierced a pigeon tied to a pole a hundred yards distant, and whose arrows went through breastplates as easily as through woollen stuff.' We are reminded that Chaucer's Knight is attended by a yeoman who is also an archer (*Prol.* 104-8; also a forester, like Chaucer himself after 1390; cf. pp. 188-9); the fact that no other servant attends the Knight throws the latter's choice into prominence. The yeoman of the *Friar's Tale* is his fellow: like

manfully with them. The foray resulted in much trade, especially after the upper house had been gained. And when everything had been done with the help and at the will of the Lord, they returned home, having lost no more than thirty men[1] slain and shot in the raid (*reyse*).

III

[Wigand von Marburg (*S. R. P.* 2. 642-3), in *D. A.*, pp. cix-cx.]

An incursion (*reysa*)[2] was made by the aforesaid Marshal, along with numerous foreigners, especially the son of the English Duke of Lancaster (*Lankasten*), the Earl of Derby (*Terpi*). Duke Vitovt (*Wytaudus*) was of the party, and the Samogitians went up on this side of the Memel. On the other side, Skirgiello (*Schirgal*) was stationed near Old Kovno[3] to prevent the Christians from crossing; this, however, he was not able to effect, for they found the ford and passed over it, and, the moment they had reached the further shore, the heathen fled, pursued by the Christians, who slew many of them. Three of the heathen dukes were taken, besides much booty.

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him, clad in green; like him, with 'arwes brighte and kene'; encountered 'under a forest-syde', as the Knight's yeoman was a 'forster.' That a yeoman (= valet) is practically identical with an archer is clear from the name valet-archer, in the account of wages paid to Derby's attendants on the expedition of 1390-91; there are *valetti sagittarii* (*D. A.* 128. 10), and the same man is now called yeoman, and now archer (*D. A.* 118. 23; 123. 31); cf. *D. A.*, p. xl, note. The 'mighty bowe' of the *Prologue* (108) is paralleled by the 'broad bows' (*arcubus latis*) which Henry bought for his journey (*D. A.* 34. 16)—four, as against eighty of the ordinary sort, and costing twice as much each.

[1] Two of Henry's knights had been captured, and were perhaps never released (*D. A.*, pp. xxxi-xxxii). See also note 20.

[2] For *reysa, reyse*, cf. Flügel, in *Angl.* 24. 444-5; *New Eng. Dict.*, s. v. Before Henry left England, his whole expedition was called a voyage (*D. A.* 1. 9; 2. 20, 24; 3. 15, 26; 4. 25, etc.). The *reys* proper lasted 66 days—Aug. 18-Oct. 22 (*D. A.*, p. xliii); for the word (*le Reys*) see *D. A.* 43. 31; 46. 12, 32 (and often); cf. *per totum* (sic) *reisam* (105. 18; 106. 11); *per totum le reisam* (106. 8). *Reze* is nearly equivalent to the French *chevauchée;* John of Gaunt's 'military promenade' in 1373 is spoken of by one author as a 'chevaucie,' and by another as a 'reze' (Armitage-Smith, p. 115).

[3] Kovno is 55 miles from the Prussian frontier, and in 1903 had a population of nearly 74,000, having more than trebled in forty years. It consists of a cramped Old Town and a New Town stretching up the side of the Niemen. The fork of the river-junction (the Niemen with the Wiliya) is an important feature of the city's strength. From 1384 to 1398 the town belonged to the Teutonic Order. Old Kovno here = Marienwerder.

> Then, as they approached Vilna, the banner of Ragnit was the first to cross the water, and there a certain knight, John de Loudeham (*Lutam*),[1] was slain. They attacked the wooden house, and quickly took it, and among the many slain was a king named Korygiello (*Karigal*).[2] . . . Duke Conrad[3] was slain with an arrow. Here they remained five weeks in continual conflict day and night.[4] . . .

6. OTHER ENGLISHMEN IN PRUSSIA[5]

Henry was by no means the first Englishman of rank to take service with the Teutonic Order; for more than half a century adventurous and ambitious spirits, among them men of the highest rank, had sought Prussia in quest of worldly renown, or at the bidding of the supreme pontiff of Christendom.

1328. As early as 1328, we find that Englishmen came to fight in the cause of the Order.[6] The Pope had proclaimed a crusade against the heathen Lithuanians, and incited the Dominicans to preach it zealously in various countries. King John of Bohemia, with a distinguished body of noblemen, was present, and the siege of Medewageln in February, 1329, is memorable for two events—the sparing of three thousand prisoners at the intercession of King John, when the Grand Master, Werner von Orseln (1324-1330), would have had them cut down, and his loss of one eye through the excessive cold and dampness[7] (but Lützow, *Bohemia,* Everyman's Library, p. 64, places this in 1336).

1331, July. Robert Ufford, first Earl of Suffolk.[8] He is said to have led a hundred knights. The war in question was one with Poland, in which the metropolitan city of Gnesen was burnt and ruined, including churches and other ecclesiastical buildings, a devastation which was terribly avenged by the Poles at Plowce on Sept. 27.[1]

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[1] This was in the battle at the ford (Aug. 28). John de Loudeham was aged 25 (*D. A.*, pp. 303-4).

[2] See p. 199, note 2.

[3] Takvyl, a brother of Vitovt; Conrad was his baptismal name (Caro 3. 100).

[4] Among modern accounts of the adventure, cf. those of Voigt (5. 541-9); Caro (3. 98-100); and Ramsay (2. 278-9).

[5] This section, while somewhat of a digression, is introduced for the sake of its bearing on the general argument.

[6] Voigt 4. 428.

[7] Voigt 4. 426 ff.; Caro 2. 131-2.

[8] Wigand (*S. R. P.* 2. 479): 'Multi peregrini de Anglia advenerant, Thomas de Offart comes,' etc.; cf. Capgrave, *De Illustribus Henricis.* But in 1331 there was no earl of that name. The first Earl of Suffolk was Robert Ufford (ca. 1299-1369), created 1337. Wigand must of course have written after this date.

1348, January. The same Earl of Suffolk, again called Thomas,[2] with many Englishmen.

1351. Henry of Lancaster, 'the most prominent man in England,'[3] and grandfather of Henry, Earl of Derby.[4] Knighton relates, under the year 1351:

> Capta est treuga inter reges Angliæ et Franciæ. Et super hoc Henricus dux Lancastrie transivit versus le Sprusiam cum multis viris in sua comitiva de maioribus regni. Et cum pervenisset in altam Almaniam, arestatus est cum aliis multis de sociis suis, et fecit redemptionem pro se et suis de iii mile scutis auri. In hoc itinere mortuus est Dominus le Ros.

Lancaster returned the following year.[5] It is this expedition which may well have served, save in its disappointing outcome, as a model for Lancaster's grandson, the Earl of Derby.

1357. Various knights and their followers came from England and Scotland. Of Scottish knights, Thomas Byset and Walter Moigne are named in a safe-conduct of Aug. 20, 1356, and, of Scottish esquires, Norman Lesselin [Leslie] and Wauter [Walter] his brother.[6]

1362, before March 13. Winrich von Kniprode, the famous Grand Master, sails up the Memel to Kovno, with guests from England,[7] Italy, and Germany, and silently passes Welun and Bisten.[8] This is the year commonly assigned to the visit of Scrope, but see the next head (1363).

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[1] Voigt 4. 488 ff.; Caro 2. 157-163.

[2] Voigt 5. 61 ff.; *S. R. P.* 2. 514.

[3] Armitage-Smith, p. 13 (cf. p. 23).

[4] See p. 176.

[5] Voigt 5. 95-6; *D. A.*, p. xvii; *S. R. P.* 2. 741-2.

[6] Voigt 5. 125; Rymer. The Leslies were witnesses to a compact between the Signoria of Florence and part of the White Company, signed in the Palazzo Vecchio on July 28, 1364 (Temple-Leader and Marcotti, *Sir John Hawkwood*, p. 31).

[7] Voigt 5. 151.

[8] Also called Pisten, Piskre, Biskre.

1363, Lent. Various Englishmen arrive.[1] That Scotchmen were also present can only be inferred from the safe-conducts granted to Thomas, Earl of Mar, and the esquire, David Barclay.[2]

Sir Geoffrey Scrope (ca. 1342-1363). The deposition of Sir Henry Ferrers, taken in 1386,[3] testifies 'that he saw . . . the said Sir Geoffrey so armed in Prussia, and afterwards in Lithuania before a castle called Piskre, and that he there died, and from there his body was brought back into Prussia and interred, in the same arms, in the Cathedral (*dom*) of Königsberg, where they were placed on a tablet, as a memorial, before the altar.' To a similar effect is the deposition[4] of John Rither, Esq.: 'After that expedition peace was made, when Sir Geoffrey Scrope went, with other knights, into Prussia, and there, in an affair (*reise*) at the siege (*saute*) of Wellon in Lithuania, he died in these arms, and was buried in the Cathedral (*dom*) of Königsberg, where the said arms are painted in a glass window, which the Deponent himself caused to be set up, taking the blazon from the arms which the deceased had upon him.' More briefly that of Thomas de Boynton[5]: 'He saw also Sir Geoffrey Scrope, son and heir of Sir Henry Scrope, interred at Königsberg, under the said arms with a difference.' And that of Sir Thomas Fitz Henry[6]: 'He also said that, when in Prussia, he saw one Sir Geoffrey Scrope buried under those arms with a difference.'

These five, then, were in Prussia—but when? The depositions do not say, but the year is generally assumed to have been 1362. Against this is the fact that no Englishmen are reported by the Continental chroniclers to have arrived in 1362. Wigand of Marburg, however, does report their presence in 1363.[7] Before the expedition began, a dispute arose between Ulrich of Hanau, a prominent nobleman, and the English, as to who should carry the banner of St. George—a dispute decided against the English.[1] In April both Pisten and Welun were totally destroyed by fire, the inhabitants having been forced to flee.[2] This, then, must be the *reyse* which included an attack on 'a castle called Piskre,' and the storming (rather than 'siege') of Welun. It was an affair of so little moment that Voigt, the historian of Prussia, does not even mention it. When Sir William de Lucy, who had served in Prussia,[3] was in that country, has not been ascertained.

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[1] Voigt 5. 164.

[2] Voigt 5. 164; Rymer, under Feb. 5 and Feb. 20, 1363.

[3] *Scrope and Grosvenor Controversy,* ed. Nicolas, 2. 445.

[4] *Ib.* 2. 353.

[5] *Ib.* 2. 310.

[6] *Ib.* 2. 321.

[7] *S. R. P.* 2. 544.

1365, July 20. William Ufford, second (ca. 1339-1382) Earl of Suffolk (and last of his line), and Thomas Beauchamp, Earl of Warwick (ca. 1313-1369). After April 13, there had been a three days' raid in the district of Erogeln[4] and Pastow, at which was present the 'comes de Warwig, qui etiam per annum stetit in Prussia cum suis.'[5] On July 25 both earls were present at Königsberg at the baptism of Butavt, son of Keistut, who had fled from imprisonment at the hands of his father. Butavt received the name of Henry.[6] He had surrendered himself at Insterburg, whereupon the preceptors of the Order, convoked at Marienburg for the purpose, decided to have the baptism take place at Königsberg, on account of the presence there of the two earls.[7]

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[1] Voigt 5. 164.

[2] *S. R. P.* 2. 84, 540, 546. Welun is on the Memel, about one-third of the distance from Marienburg to Baierburg (Toeppen, *Atlas zur Hist.-Comp. Geog. von Preussen* (II), Gotha, 1858). It is not to be confounded with Vilna, as is done by Manly (*Trans. Amer. Phil. Assoc.* 38. 101, note 2). Pisten is near the junction of the Dubissa with the Memel (Toeppen).

[3] *Scrope and Grosvenor Controversy,* ed. Nicolas, 2. 261-2 (1. 78).

[4] On the Dubissa river. *See Jour. Eng. and Germ. Phil.* 14. 386.

[5] Wigand of Marburg (*S. R. P.* 2. 548-9); Voigt 5. 175.

[6] Voigt 5. 176-8; Chron. Liv. (*S. R. P.* 2. 85); Wigand (*S. R. P.* 2. 551).

[7] Wigand (*S. R. P.* 2. 551). This occurrence is much distorted in later accounts. Thus in the *Pageant of the Birth, Life, and Death of Richard Beauchamp* [1382-1439], *Earl of Warwick* (Longmans), we are told (Plate XXII), that 'Earl Thomas his grandfadre . . . in warre had taken the kynges son of Lettowe, and brought hym into Englond, and cristened hym at London, namyng hym after hymself Thomas.' And Stubbs, relying on the traditions of the Beauchamps, reports (p. 194):

1366. Several noblemen came from England. Wigand[1] names 'Dominus Bemunt and Nortz Vewater Anglicus,' but the former of these is probably Gui de Blois, Sire de Beaumont, the patron of Froissart. The error of regarding him as an Englishman may repose upon his recent sojourn in England 'as a hostage for King John.'[2] 'Nortz Vewater Anglicus' may rather have been a Fleming, judging from his name, and his association with Gui.

1377. Sir Ekhart of Scotland is named by Suchenwirt.[3]

1385. Sir William Martel is mentioned as being present at a table of honor.[4]

1390. This, as we have seen, was the year of Henry's arrival.[5]

1391. Thomas Woodstock, Duke of Gloucester, William Douglas, and perhaps John Montagu, Earl of Salisbury. Many Englishmen arrived in this year.[6] In September the Duke of Gloucester, the Earl of Derby's uncle, was commissioned to go to Prussia to treat with the Grand Master.[7] It does not appear that this was a martial expedition, and in any case the duke encountered violent storms, and was driven back.[8] The same year, William Douglas of Nithsdale, who had been engaged in a tilting-match with Thomas, Lord Clifford (ca. 1368-ca. 1391), in the spring of 1390,[9] appeared at Königsberg, and was slain, together with one of his followers, in an affray with a party of

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'In the great battle in Turkey, fought Nov. 1, 1364, he took prisoner a son of the King of Lithuania, whom he brought back to England, and made a Christian.' Cf. Barnes, *Hist. Edward III,* p. 669.

[1] Voigt 5. 187.

[2] Cf. *Encyc. Brit.* 11. 244.

[3] See *Journ. Eng. and Germ. Phil.* 14. 386.

[4] Voigt 5. 472, note 2 (cf. pp. 474, 717).

[5] See above, p. 196.

[6] Voigt 5. 595.

[7] Rymer, under Sept. 5, Sept. 16, and Dec. 16.

[8] *D. A.,* pp. xv-xvi; Ramsay 2. 279; *Dict. Nat. Biog.* 56. 155; 26. 32; Walsingham, *Hist. Angl.* 2. 302; Higden, *Polychr.* 9. 261-2; Hakluyt, *Principal Navigations,* 1903, 1. 306-7.

[9] Ramsay 2. 277; Higden, *Polychr.* 9. 236; *Chron. Lond.* (Nicolas), p. 78; *Rot. Scot.* 2. 103-111; cf. *Dict. Nat. Biog.* 11. 77. For Clifford in an encounter with Boucicaut, see Le Roulx, p. 161 (cf. p. 176, note 2).

English.[1] Boucicaut (1366-1421), who had been one of the challengers at the jousts of St. Inglevert[2] in the spring of 1390, was present at Königsberg (the third time he had been in Prussia), and growing indignant at what he considered treason on the part of the English toward Douglas, offered to prove it on their heads; but they refused to entertain a challenge from any but the Scotchmen.[3]

Sir John Montagu, afterwards third Earl of Salisbury (1350?-1400), having done homage for his father's estate, obtained the king's licence to journey into Prussia with a retinue of ten servants,[4] but nothing further is known of the project.[5]

1392. Sir Henry Percy (1364-1403), better known as Hotspur, who had been in the train of Derby at the jousts of St. Inglevert,[6] and was to stand by Henry as events moved toward his assumption of the crown,[7] must have been in Prussia by June of this year, at latest.[8] A contention arose between him and Rupert of Schokendorf as to which should carry the banner of St. George,[9] but Vitovt and his wife smoothed matters over. Vitovt, who was at this moment meditating treachery against the Teutonic Order, with which he had been allied, appeared about June 24 at the castle of Ritterswerden. On arriving at Tzuppa, between Insterburg and Kovno,[1] Vitovt sent Percy and the other foreigners back to Königsberg, with the assurance that he did not need them.[2] He then proceeded to reveal his renewed enmity to the Order by making the garrison of Ritterswerden prisoners, and burning the castle to the ground.[3] The next year after these events Hotspur was in Cyprus,[4] as was Henry also,[5] though probably they were not together.[6] It is painful to reflect that ten years after these visits to Cyprus (July 21, 1403), Henry, to the shout of 'Henry Percy King!' replied with the counter-shout, 'Henry Percy dead!' and that the king's 'success involved the loss of all popularity, and all future comfort.'[7]

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[1] Voigt 5. 596; Wigand (quoted by Voigt); John of Posilge (*ib.* 3. 172-3); the Older Chronicle of the Grand Masters (*ib.* 3. 619-20); Fordun, ed. Goodall, Bk. 14, chap. 56 (2. 416).

[2] Between Calais and Boulogne. Henry was present, and on April 20 took part in the jousting (Le Roulx, p. 176). Cf. *D. A.*, pp. 296, 300; Kervyn 14. 44-45, 105-151, 416-7, 420; *Dict. Nat. Biog.* 26. 32; Wylie 4. 279, and the authorities there cited. King Richard seems also to have been present, and to have been eclipsed by Henry (Gower 2. xxv; Wylie 1. 5; *Chronique de la Traison et Mort de Richard II* (London, 1846), p. xliv.

[3] Voigt 5. 596; *Livre des Faicts du Bon Messire Jean le Maingre, dit Boucicaut,* chap. 18 (Michaud et Poujoulat, *Nouv. Coll. des Mém.* 2. 232-3).

[4] Beltz, p. 363; *Dict. Nat. Biog.* 38. 205.

[5] Beltz' suggestion that he probably was associated with Henry in his expedition against the Lithuanians is of course absurd. He eventually became an enemy of Henry, rebelled against him, and was beheaded by a mob; cf. Shakespeare, *Richard II* 2. 4; 3. 3; 5. 6.

[6] *Dict. Nat. Biog.* 44. 396.

[7] Kervyn 16. 109, 192; Ramsay, *Lancaster and York* 1. 54; cf. *Dict. Nat. Biog.* 44. 397.

[8] Caro 3. 110.

[9] Wigand (*S. R. P.* 2. 646, 648); Voigt 5. 607-8; *D. A.*, p. 1 (cf. above, under 1363); Voigt 5. 151; *Jour. Eng. and Germ. Phil.* 14. 382; Coulton, p. 278.

Henry, Earl of Derby. Having taken ship at Heacham on July 24, Henry was at Königsberg by Sept. 2, but appears to have left by Sept. 3 or 4.[8] The Teutonic Order seems to have paid him $30,000 toward the expenses of this expedition,[9] though they made no use of his services.[10]

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[1] *D. A.*, p. xlix.

[2] Wigand (*S. R. P.* 2. 648); Caro 3. 110.

[3] Voigt 5. 612; Caro 3. 110.

[4] *D. A.*, p. 311; Stubbs, p. 198; Raine, *Extracts from the Northern Registers*, p. 425.

[5] *D. A.*, pp. lxv, lxxvii.

[6] A letter written July 15 by the King of Cyprus mentions Hotspur, but not Henry—and Henry had been there in February.

[7] Ramsay, *Lancaster and York* 1. 63, 64; cf. Coulton, p. 51.

[8] *D. A.*, pp. xlviii, lxxii.

[9] *D. A.*, p. xlix.

[10] So far from receiving anything from the Order on his first mission, it seems that he paid $1000 to two Prussian knights who attended him on the campaign of about two months, to say nothing of other expenses on the foray. If Chaucer, then, had Henry in mind in drawing the portrait of his Knight, as Hertzberg (p. 579) in 1866 was the first to suggest, it would seem that Trevelyan is wide of the mark when he says (*England in the Age of Wycliffe*, p. 59) that the latter 'has returned from letting out his services abroad, and is the sort of person to enter into a similar contract with some noble at home.' For the nine and a half months he was absent from England, Henry spent something like $330,000, of which he provided about $62,500, and his father, John of Gaunt, the rest.

1394, January or February. John Beaufort.[1] The eldest natural son of John of Gaunt by Katharine Swynford was possibly with his half-brother Henry on the latter's return to England in 1391.[2] At all events, he (Wigand calls him Bekvort) was in Prussia in 1394,[3] and took part in an expedition to Grodno, Novogrodek, Lyda, and Merecz, in which 2200 prisoners were made, and 1400 horses and much cattle carried off.[4] John had been with Henry at St. Inglevert in the spring of 1390, and had actually gone on the Barbary crusade,[5] as Henry had planned to do.[6]

7. HENRY'S ACQUAINTANCE WITH THE TABLE OF HONOR, AND ITS BEARING ON THE DATE OF THE PROLOGUE

Henry would, no doubt, as we have already intimated,[7] have talked with Chaucer about the Teutonic table of honor. That Chaucer should have learned about it from any other source is unlikely, for we know definitely of only five occasions when it was held—in 1377, 1385, 1391, 1392, and 1400.

1377. This was described in a previous article.[8] It was held at Königsberg before the *reyse*.[9] Henry would probably have heard it described by a prominent participant, Albert III of Austria.[10]

1385. In this year there was a great feast at Königsberg, at which were present 55 knights, 7 barons, 7 bannerets, and

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[1] Born ca. 1372 (Armitage-Smith, pp. 391, 462, 464-5); the Percy MS. 78 (see the last reference) says that he was born in the lifetime of Blanche, that is, before Sept. 12, 1369; others say ca. 1375 (*D. A.*, p. 301).

[2] *D. A.*, p. 301; but cf. p. xxxv.

[3] Wigand (*S. R. P.* 2. 653); Voigt 6. 10; Caro 3. 154-5.

[4] Voigt 6. 11; Caro 3. 154. By March 14 he was in Dantzic, where he had to give a note for 312 gold nobles, probably for his return-fare, and that of his companions Stephen Scrope and three others, to England (note to Wigand, as above).

[5] *D. A.*, p. xxxviii; cf. Le Roulx, pp. 176, 242.

[6] *D. A.*, pp. xxxix-xliii.

[7] See above, p. 196.

[8] 'Beginning the Board in Prussia,' *Jour. Eng. and Germ. Phil.* 14. 375-388.

[9] Voigt 5. 278-9.

[10] See above, p. 196.

25 esquires (*gute Knechte*).[1] At the high table of honor were seated fourteen guests, of whom only one was an Englishman, Sir William Martel.[2] It can hardly be from him, of whom history records so little, that Chaucer learned of the custom.

1391. This was the year in which Henry was in Prussia, but the feast was held after his departure.[3] On account of the dissension between the English and the French,[4] the table of honor was not held at Königsberg, but after the army had advanced into the enemy's country.[5] Here the board was magnificently spread on Sept. 1,[6] the place chosen being an island (*Werder*),[7] in the vicinity of Old Kovno.[8] The viands had been brought from Königsberg. The banquet took place in a splendid pavilion, and there was abundance of gold and silver vessels.[9] Among the honored guests was Frederick, Margrave of Meissen, who had come with 700 horses, and he who began the board was Conrad Richartssdorf of Austria, who had been one of the fourteen at the table of honor in 1385.[10] Whether Boucicaut, Frederick, or any of the Englishmen or Scotchmen,[11] was thus signalized, we can only conjecture.

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[1] Voigt 5. 471-2.

[2] Above, p. 206; Voigt 5. 472, note 2.

[3] The statements of Dlugosz and Kojalowicz that a table of honor was held in 1390 seem to rest on confusion with that of 1391, though Dlugosz (*Hist. Pol.* I. 127-8) is explicit on the point that Henry was present (Voigt 5. 543).

[4] Above, p. 207.

[5] The table of honor seems not to have been held on the return from an expedition (*nach erfochtenem Siege*), as Treitschke supposes (1. 81).

[6] Caro 3. 105.

[7] Probably Ritterswerder, about 2½ miles from Kovno.

[8] Wigand says: 'ubi quondam antiquum Cawen stetit'; John of Posilge 'ken Cawen obir die Nerye'; the Æltere Hochmeisterchronik: 'zur alde Kawen uff dem werder.'

[9] Voigt 5. 597.

[10] Wigand (*S. R. P.* 2. 644-5); Ælt. Hochmeisterchronik (*ib.* 3. 619-20); John of Posilge (*ib.* 3. 172-3).

[11] Bower says (Fordun, ed. Goodall, 2. 416): 'Isto anno proditionaliter interfectus est ab Anglicis nobilis Willelmus Douglas de Nyddisdale super pontem de Danskin in Spruza, qui tunc ammiraldus electus fuit ducentarum et quadraginta navium, ad oppugnandum Paganos, qui eo tunc, præ ceteris, *ad mensam honoris magistri de Spruza ab herellis præconizatus est.*'

The order of precedence was determined according to the general principles: 'noch seyner ere, dy her [er] vordynet hette in ritterlichen gescheften' (Ælt. Hochm.); 'nach ritterlichen ere' (*ib.*); 'der [Conrad] was der gepreiseste in ritterlichen gescheften, wen her was obir lant gerethen zcu dem heiligen grabe' (*ib.*)[1] The ceremony had never before been so brilliant (John of Posilge).

1392. In the autumn of this year, the marshal, Engelhard Rabe, held another table of honor at Johannisburg, south of Lake Spirding. Apel Fuchs of Franconia, who bore the banner of St. George, began the board.[2]

1393. In January of this year there was an expedition against Grodno, in which the Duke of Guelders was present,[3] and with reference to which one historian speaks of a table of honor being proclaimed[4]; but I find no confirmation of this.

1400. The decline of the institution is shown by its employment as a mark of honor to the wife of Vitovt in the summer of 1400, when she and the chief members of her retinue were entertained at Marienburg. At this banquet the guests were presented with jewels and gilded drinking-cups, steeds and palfreys, etc.

With this the ceremony seems to have ended. It may well have originated in an impulse derived from Edward III's institution of the Order of the Garter, which in turn may have been influenced by the stories of Arthur's Round Table.[5] It was now at the end of its usefulness, as were the raids which it served to encourage.[6]

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[1] We see that if Henry had already visited the Holy Sepulchre, as he was to do early in 1393, this of itself would have been a strong recommendation.

[2] Wigand (*S. R. P.* 2. 648-9); Dlugosz, *Hist. Pol.* 1. 137; Voigt 5. 624.

[3] Voigt 5. 636-7.

[4] Caro 3. 154.

[5] Voigt 5. 712; Treitschke 1. 81. There had been a 'Round Table,' presided over by Roger Mortimer, Earl of March, in 1328 (Knighton; Avesbury). See also Bateson, *Mediæval England,* pp. 310-1, and especially *Archæologia* 31 (1846). 104 ff.

[6] Caro (3. 153) speaks of 'die allmälig in Europa sich verbreitende Anerkennung der Thatsache, dass mit Ausnahme von Samogitien kein

Of the five occasions enumerated above, Henry would have heard of the first from Albert of Austria, and surely of the third and fourth when in Prussia, or afterwards in conversation with such knights as Boucicaut, whom he would meet on his foreign travels. That of 1400 was too late, so that only that of 1385 remains—in other words, Henry would probably have been acquainted, through eye-witnesses, with every table of honor of which we have any record previous to his return to England in 1393. Is it easy to escape the presumption that it is through him that Chaucer acquired the information which he so deftly uses in the *Prologue,* since we can think of no other historic person so likely as he to have been the medium of communicating it?

8. THE CURRENT THEORY REGARDING THE DATE OF THE PROLOGUE

The course of our inquiry, then, has led us to conclude that the *Prologue,* or at least the description of the Knight, can not well have been written before Henry's return in 1393. What specific arguments are there for an earlier date? The one which is commonly relied on is that of Hales in favor of 1387, printed in 1893.[1] He declares that the evidence for placing the *Prologue* so late is extremely slight, if indeed there is any. His argument for 1387 is as follows. The merchant

> wolde the see were kept for any thing
> Bitwixe Middelburgh and Orewelle.

Now in 1384, and again in 1388, the woolstaple was at Calais, but between those dates it was at Middelburgh, and at no other time; 'so only just at that time could the merchant's words have their full significance—have a special pointedness.' Chaucer

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Objekt für Heidenkämpfe mehr vorhanden, und dass die Litthauer wirklich Christen geworden waren: eine Ueberzeugung, welche zugleich mit dem Erlöschen des letzten aufflackernden Feuers einer ehrlich gemeinten Romantik zusammenfiel und den Orden, der von diesen Bedingungen abhängig war, seiner besten Hülfsquellen beraubte. Nur noch wenige "Kriegsreisen" werden wir daher zu verzeichnen haben.' Again (3. 154) he characterizes these forays as savage, and now [1394] partly obsolete. For the appeal made by these forays at an earlier period, cf. Voigt 5. 167-8, 183-4, 551.

[1] *Athenæum,* April 8; reprinted in Hales, 1893, pp. 99-101.

was not relieved from daily attendance at the Custom House till February, 1385, and he did the *Legend of Good Women* as soon as this leisure came to him. Hence the *Prologue* was probably composed immediately after 1386—that is, in 1387.[1]

To Hales' argument it may be replied:

1. The need that the sea should be kept was keenly felt during the whole period 1372-87.[2]

2. There was need much later than this for keeping the sea. In the *Libel of English Policy* (1436), the very first stanza insists 'that we be masters of the narrow sea.'

3. Middelburgh and Orwell may be used merely as representative names, just as, in the book last named, the author, while recognizing Bruges as the 'staple fayre' of Flanders, talks of Dover and Calais—

> And chiefly kepe the sharpe narrow see
> Betweene Dover and Caleis.

4. One of the most memorable naval victories ever won by the English was that of Sluys in 1340, and Edward III took passage for this encounter from Orwell.[3] Sluys (l'Ecluse) is a later name for Swyn, and is virtually identical with Middelburgh. Chaucer may then have desired to remind his countrymen of this glorious occasion by a mention of the ports of departure and destination.

5. Even if it were granted that Chaucer had in mind the period 1384[4]-8, it would not follow that the lines were written

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[1] Cf. Tatlock, pp. 147, 150. Tatlock argues that the merchant was a member of the staple, and dealt in wool; and, in corroboration, reminds us that 'he even wears a "Flaundrish bever hat."' However, Edward III wore a 'bever hat' in 1350, at Espagnols-sur-Mer (Kervyn 5. 267); was Edward III, then, a merchant of the staple? (It is well known that he went to France, disguised as a merchant, in April, 1331).

[2] Coulton, p. 133: 'Our crushing defeat by the combined French and Spanish navies off La Rochelle in 1372 lost us the command of the sea until our victory at Cadzand in 1387'; cf. Nicolas, *Hist. Royal Navy* 2. 141, 319 ff. As a result of the victory, we are told by Nicolas: 'The prizes were sent to Orwell and other ports; . . . the citizens of Middelburgh offered to purchase the wine.'

[3] Nicolas, *op. cit.* 2. 46, 502. At this battle Henry of Lancaster distinguished himself (*ib.* 2. 59).

[4] Jenckes (*The Origin . . . of the Staple,* p. 79) says 1383.

then. As Wells acutely observes[1]: 'This implies composition after 1384, but gives no *terminus ad quem.*'

Hales' argument, in the same paper,[2] from *Venus* 76-8, that Chaucer's right hand may have been losing its cunning in 1393, is sufficiently refuted by Lounsbury,[3] who finds allusions by Chaucer to his old age in *House of Fame* 992-9 [not later than 1384], *Legend of Good Women* 258-263, 313-6 [ca. 1385], *Scogan* 29-42 [ca. 1393], as well as in the *Venus.* Of the latter he asks: 'Can it be seriously maintained that these are the words of a man who was no more than sixty at the utmost?'

The arguments in favor of the earlier date, then, seem quite insufficient to overthrow the considerations which point to 1393 or later.

We have now seen (pp. 166, 175) that Chaucer may have witnessed Henry's progress from Dartford to London on July 5, 1393, and that his impressions are probably recorded, with some poetical embellishment, in *K. T.* 1297-1328; that Chaucer's relations with the royal family, including John of Gaunt, were such as to recommend him to Henry (pp. 177-8); that Chaucer was on friendly terms with prominent members of Henry's suite (pp.190-192); that there was every reason why Chaucer should pay court to Henry, and that they would not have lacked topics of conversation (pp. 193-6); that Henry, like Chaucer's knight, had 'reysed' in 'Lettowe' (pp. 196 ff.); that Henry, beyond any man whom Chaucer is likely to have known, had the amplest opportunity to acquaint himself with the facts concerning the table of honor, and that the brilliant celebration of the feast in 1391, at no great distance from the scene of Henry's exploits in the previous year, must have been most impressive to his imagination (pp. 210-1); and that therefore the part of the *Prologue* relating to the knight is not likely to have been written before the summer of 1393 (p. 212), the same being probably true of *K. T.* 1297-1328.[4]

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[1] *Manual of the Writings in Middle English,* p. 691.

[2] Pp. 101-2.

[3] I. 33-42.

[4] If the *Knight's Tale* is to be dated as late as 1393, then the Clanvowe who was the author of *The Cuckoo and the Nightingale* was probably Sir Thomas, rather than Sir John, his father, as Kittredge supposes (*Mod.*

Phil. I. 14 ff.), since the date of Sir John's death is thought to have been 1391 (Skeat 7. lviii), and the poem quotes *K. T.* 927-8. Other facts point in the same direction. Lines 284-5,

> Before the chambre-window of the quene
> At Wodestok,

must refer, as Skeat points out, to a time when there was a queen at Woodstock, who must therefore have been Joan of Navarre, queen from 1403 to 1413. John Clanvowe was M. P. in 1348, would therefore presumably have been born as early as 1327, and have been at least 63 in 1390, a date which Kittredge considers possible. His son, M. P. in 1394, would be more nearly of the age for writing a love-poem of this sort. Then the allusion to the eagle, if it refers to Henry (see above, p. 171), would more aptly fit the last decade of the century, or the first of the following. Indeed, Henry Bradley (*New Eng. Dict.* s. v. Grede) dates the poem 1402-10.

II. CHAUCER'S KNIGHT AND HIS EXPLOITS IN THE SOUTH

The Knight's adventures in the South were distributed through the Mohammedan lands which bordered the Mediterranean on the east, south, and west, where, like his adversary, 'banished Norfolk,' he was to be found

> Streaming the ensign of the Christian cross
> Against black pagans, Turks, and Saracens.

His exploits were performed at Palátia, Satalia, and Ayas, on the eastern coast; at Alexandria, Tlemçen, and in Morocco, on the southern; and at Algeciras, where the Pillars of Hercules still said, *Ne plus ultra.* Thus the range of his crusading territory—to say nothing of Prussia, Lithuania, and Russia—was nearly 2300 miles from end to end. The period within which fall the historic exploits which Chaucer had in mind extends from 1343 to about 1367.

> At Alisaundre he was, whan it was wonne. . . .
> In Gernade at the sege eek hadde he be
> Of Algezir, and riden in Belmarye.
> At Lyeys was he, and at Satalye,
> Whan they were wonne; and in the Grete See
> At many a noble armee hadde he be.
> At mortal batailles hadde he been fiftene,
> And foughten for our feith at Tramissene
> In listes thryes, and ay slayn his fo.
> This ilke worthy knight had been also
> Somtyme with the lord of Palatye,
> Ageyn another hethen in Turkye:
> And evermore he hadde a sovereyn prys.

Alexandria, October 10, 1365. Pierre I of Lusignan, King of Cyprus, with 108 vessels of his own, and 10 from Rhodes, arrived on Oct. 9 at Alexandria, said by a contemporary to be as thickly populated as Paris, as beautiful as Venice, and as strong as Genoa. An engagement took place on the 10th, and Alexandria fell, but his Continental auxiliaries, realizing that they could not hold the city, decided the king to evacuate it after three days of pillage. There were present knights from Provence, Guienne, Lombardy, Flanders, England, and Germany.[1] Of the English, we know only the names of Sir Stephen Scrope (ca. 1345-1406) and Nicholas Sabraham. According to Sabraham, Scrope, immediately on landing, received the order of knighthood from the King of Cyprus.[2] There was also an unnamed Scottish knight who distinguished himself by his valor, and was slain while attacking the gate of the custom house.[3] A picturesque incident was the fighting in the shallow water on the beach, where 8000 Christians engaged a much larger number of Mussulmans.[4] The victory has been described as a brilliant, but fatal success.[5]

Algezir, summer of 1343. Algecira(s), Algezira(s).[6] Froissart's *Algesiras, Argesille, Arsesille;* Jean le Bel's *Algheside, Alg(h)esyde.* The name is Arabic, and signifies 'island,' the whole term being *al-Gazîra al-Khadrâ* (otherwise transliterated as *al-Djezirah-al-Hadra*), 'green island,' from an islet opposite, called even now *Isla Verde.* The little town lies just across the bay from Gibraltar, 6 miles to the west. It has recently come into notice because of the international conference on Moroccan affairs, held there from Jan. 16 to April 7, 1906.[7]

After Alfonso XI's remarkable victory over the invading Moors at Salado (or Tarifa), on Nov. 28, 1340, when Abu Hamer, son of Abu-'l-Hassan,[8] Sultan of Belmarye, was captured, and some 200,000 Moors were slain and taken prisoners,[9] the most important military operation in Granada was the siege of Algeciras by the Spaniards and representatives of other nations, under the command of Alfonso. The Moors of Africa, bent on revenge for the defeat at Salado, by which they had been stricken sore, had fitted out a fleet, which had been destroyed and put to flight by the Genoese admiral, Egidio di Boccanegra (brother of the first doge of Genoa, Simone), commanding 70 galleys, of which 12 were Genoese.[1] The overthrow of the fleet rendered it possible for Alfonso to begin the siege of Algeciras, which was accordingly undertaken on Aug. 3, 1342, with a combined investment by sea and land. The Moorish garrison numbered 30,000 men, of whom 12,000 were archers. The neighboring territory abounded in tillable land and pasture, well irrigated and provided with drinking-water; mills were at hand to provide flour, and orchards and vineyards were scattered through the environs.[2] Alfonso's fleet proceeded to blockade the harbor, while his army took up a position southeast of the city. Drawing near to the Old Town, the troops dug a trench from the little river Miel to the seashore, behind which they erected a stockade and cast up entrenchments. By early October Alfonso began to make applications for aid to foreign powers, especially to France and the Pope. About this time heavy rains, continuing for a month, flooded Alfonso's camp, carrying away tents and huts, and causing much sickness, to say nothing of discomfort and the destruction of food. Whole nights long the king was obliged to stand in the water, so drenched was his bed.[3] What with all this, and the nocturnal sallies of the Moors, the army was forced to construct shelters on higher and more distant points. It was not until March of the next year, 1343, that a close and complete investment was effected. Ballistas were set up, to match the artillery in the city; and in the handling of these the Genoese showed themselves peculiarly expert. As early as February, Abu-'l-Ḥajjáj, King of Granada, sent an embassy, as he did more than once afterwards, to treat of peace; but Alfonso declined any overtures, except on condition that he would abandon his ally, the King of Belmarye; on this point, however, Abu-'l-Hajjáj was obdurate. Meanwhile, Abu-'l-Hassan would have attempted to relieve the garrison by an invasion from Ceuta, on the African side of the Strait, had it not been for a revolt of his son, Abderrahman, whom he had left behind. To prevent the running of the blockade by vessels laden with provisions, Alfonso caused piles to be driven in the bay, and connected by heavy chains. By May knights from France and Germany began to arrive, and in June Gaston de Foix and his brother, the viscount of Châtillon. In August the Pope sent Alfonso a much needed loan of 20,000 florins, while the King of France, Philip VI, gave him 50,000 florins outright—an aid which was perhaps responsible, by alienating Edward III,[1] for the early recall of Derby and Salisbury. Between October and the middle of December, 1343, three unsuccessful attempts were made to relieve the Moorish garrison, whose position was becoming untenable. Rain fell in torrents through the month of February. On March 21, 1344, an envoy from the King of Granada appeared, with conditions of peace: the whole population of Algeciras was to be allowed to depart with their goods; a truce for a certain number of years was to be concluded between Alfonso and the two Moorish kings; and Abu-'l-Hajjáj was to pay Alfonso a yearly tribute of 12,000 *doblas* as his vassal. The terms were accepted; on March 26 the Moors evacuated the New Town, and on the 27th the Old. Thus ended a Mohammedan occupation of 633 years, after a siege lasting from Aug. 3, 1342, to March 26, 1344—nearly twenty months.[2] In 1368 'the Granadines recovered Algeciras, which was utterly destroyed a decade later, that it might no longer tempt the Spaniards.'[3]

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[1] *Bibl.* 1 (1844). 502-4; Le Roulx 44 (1886). 125-8; Machaut 2190-3661 (pp. 67-111).

[2] *Scrope and Grosvenor Controversy,* ed. Nicolas, 2. 323. For two other possible names, see Stubbs, p. 194.

[3] Machaut, vv. 2828-33 (p. 86).

[4] Le Roulx, p. 127; Machaut, vv. 2426 ff. (p. 74).

[5] *Bibl.,* p. 503. For the results, see *Bibl.,* pp. 503 ff.; Le Roulx, pp. 129 ff. For Petrarch's lament over the eventual failure, see Stubbs, p. 195.

[6] The final *-s* not pronounced.

[7] *Encyc. Brit.,* 11th ed., 1. 642; 18. 858.

[8] The 'Albohacen' of the *Cronica.*

[9] Schirrmacher, *Gesch. von Spanien* 5. 213; Murimuth, pp. 263 ff.; Jean le Bel 1. 213 ff.; Ibn-Khaldoun, in *Jour. Asiat.* 9. 12 (1898). 415 (cf. his *Hist. des Berbères,* tr. Slane, 4. 229-30).

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[1] Schirrmacher 5. 218-220.

[2] *Cronica*, p. 489: 'Muy buenas aguas dulces, et grandes labranzas de pan, et muchas viñas et huertas, et muchos regadios, et moliendas asaz.'

[3] *Cronica*, p. 506.

The following account of the siege is by the Arab historian, Ibn-Khaldoun, who lived from 1332 to 1406 (*op. cit.* 4. 234-6):

> The Christian king [Alfonso XI], having returned to his own country after the battle of Tarifa [= Salado, 1340], again attacked the Mussulmans of Andalusia, hoping to conquer them without difficulty. . . . In the [Mohammedan] year 742 [A. D. 1341-2], Alcala [la Real] succumbed. . . . As to the sultan Abu-'l-Hassan, he landed at Ceuta, in order to make ready a new expedition, and thus to take his revenge. While his agents traversed the cities

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[1] Schirrmacher 5. 231; but this is hardly likely, in view of p. 222, note 3.

[2] *Cronica;* Schirrmacher 5. 216-236.

[3] Meakin, p. 106. Ibn Khaldoun (*Hist. des Berbères,* tr. Slane, 4. 381) says that it was destroyed between 1378 and 1388.

of Maghrib [modern Morocco and Algeria] to levy troops, his caids visited the seaports, and urged on the armament of a new fleet. In a short time a considerable number of ships were equipped, and the sultan returned to Ceuta [probably from Fez] for the purpose of inspecting them, and of sending over his army into Spain. . . . The Christian king learned of these preparations, and sent his fleet to the Strait [of Gibraltar], to engage that of the Mussulmans. In this encounter, God again submitted the true believers to a severe test: many of them suffered martyrdom, and the Christians remained masters of the sea. Then the king left Seville at the head of an immense army, and marched to Algeciras, in the hope of making it suffer the same fate as Tarifa, and of incorporating it into his dominions. Aided by a throng of engineers and workmen, he besieged this seaport—this place of embarkation for the Mussulman ships—and kept it blockaded so long that his army ended by building wooden houses for themselves. Abu-'l-Hajjáj, Sultan of Granada,[1] placed himself before Gibraltar with the Andalusian army, in order to cover this important place. Abu-'l-Hassan remained in Ceuta, and from there shipped money, grain, and knights into Spain under cover of darkness, whenever he could elude the vigilance of the hostile fleet. His efforts were of no avail; the city, closely pressed, and a prey to famine, was obliged to yield. Then Abu-'l-Hajjáj sought to obtain peace by dispatching an agent, provided with a safe-conduct from the [Christian] king, and commissioned to find the sultan, and to broach this matter to him; but his vessel was treacherously attacked by several Christian ships which the king had sent to intercept him.[2] It was only after having sustained a severe combat and experienced mortal anguish, that the Mussulmans succeeded in regaining the shore. The Merinide troops shut up in Algeciras were at length reduced to such extremities that they offered to evacuate the place by an honorable capitulation. The king accepted the conditions, fulfilled them loyally, and sent back the garrison to Maghrib. Algeciras surrendered in 743 [1342-3]. The sultan received these warriors with a kindness which made them forget the evils they had suffered, and distributed to them so many robes of honor, saddle-horses, and rewards of money that every one marveled; but he cast into prison the vizier, Asker-Ibn-Tahadrît [the general-in-chief], in order to punish him for not having repulsed the enemy, which would have been entirely possible for him with the troops under his command.

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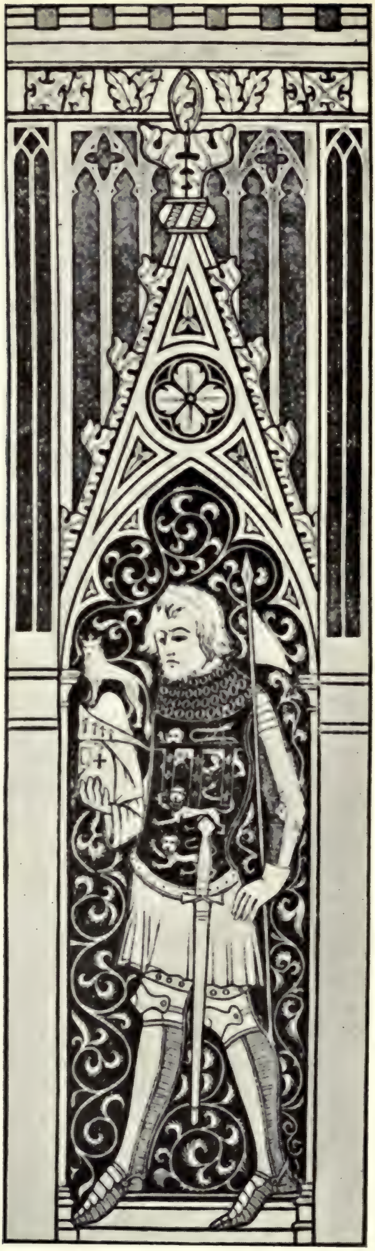
[1] His name is several times repeated on the walls of the Alhambra (*Jour. Asiat.* 9. 12. 437, note 93).

[2] The *Cronica* (pp. 595-7) will not allow that Alfonso was to blame, but imputes the treachery to a Genoese, Valentin de Lorox, at the instigation of the Genoese admiral; cf. Schirrmacher 5. 235.



Henry of Lancaster.

(From the brass of Sir Hugh Hastings at Elsing, Norfolk.)

> Having returned to his capital, Abu-'l-Hassan remained profoundly convinced that the cause of God would end by triumphing, and that the All-Powerful would fulfil his promise by granting to the Mussulmans a return of good fortune, and to religion a speedy victory, for 'God will complete the manifestation of his light, in spite of the unbelievers.'[1]

The two Englishmen who were conspicuous at the siege of Algeciras were Henry, afterwards Earl and Duke of Lancaster, but then Earl of Derby, and William Montagu, first Earl of Salisbury (1301–1344), after whom Salisbury Crags, at Edinburgh, were named. Salisbury was 42 years of age, and Derby about two years older. Salisbury was to die in the following year, while Derby lived till 1361.[2] Though Salisbury had distinguished himself in various ways (he was made earl in 1337), he never gained the renown of Derby, whom Petrarch (not earlier than 1364, according to Biagi) celebrated, along with Arthur, Godfrey, etc., in the lines (*Trionfo della Fama* 2.152-3):

Poi il duca di Lancastro, che pur dianzi
Era al regno de' Franchi aspro vicino.[3]

According to the *Dict. Nat. Biog.* (26. 102): 'In the spring of 1343 he [Henry] was sent on embassies to Clement VI at Avignon, and to Alfonso XI of Castile.' Of this I find no direct evidence, but on March 31 there is a writ with respect to 'Thomas Cok [Cook] going to Spain, there to stay in the company of the king's kinsman, Henry of Lancaster, Earl of Derby,' and on May 2 one regarding 'William de Cusancia, staying beyond the seas in the company,' etc.[4] On July 6 the king sends the Earls of Derby, Arundel, Warwick, and others, to treat of certain matters with Pope Clement VI at Avignon.[1]

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[1] *Koran,* surat 66, verse 8.

[2] See above, pp. 176-7.

[3] He is thus characterized by the *Dict. Nat. Biog.* (26. 105): 'Henry of Lancaster was esteemed throughout Western Europe as a perfect knight; he was brave, courteous, charitable, just, and at once magnificent and personally temperate in his habits. He had a thorough knowledge of public affairs, was a wise counsellor, and was loved and trusted by Edward III beyond any other of his lords. Like his father, Earl Henry, he was religious, and during his last days is said to have been much given to prayer and good works.' His portrait from the brass of Sir Hugh Hastings (d. 1347), at Elsing, Norfolk, is reproduced opposite, from Hewitt, *Ancient Armour* 2. 195.

[4] Both in *Cal. Pat. Rolls.*

The English documents next in time would make it appear that Henry was not starting from England till September, but, like that of July 6 mentioned above, they must be understood as missives dispatched to travelers already residing in foreign countries. The first is of Aug. 29, and empowers Henry and eleven others to treat with the ambassadors of France in the presence of the Pope. The second, of Aug. 30, is a credence for Derby and Salisbury, addressed to Alfonso. The third, of Sept. 2, empowers the two earls to treat with Alfonso.[2]

On Nov. 24 Edward III informs the Pope that he will send Derby and Warwick as ambassadors, with reference to the prolongation of the truce concluded with France in February.[3]

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[1] Rymer. Kervyn (23. 459) tells of his being sent by Edward III on July 6 as ambassador to the Pope, and relates that, having reached France, he learned that a crusade against the Moors was in progress, and so passed over into Spain. In view of the above documents (cf. p. 223, note 7), however, the latter part of this statement looks mythical.

[2] All in Rymer. The shocking story told by Jean le Bel (2. 30-34; cf. *Chronique Normande,* pp. 54, 59; *Chronographia Regum Francorum,* pp. 197, 204-5; *Istore et Croniques de Flandres* 2. 6, 9), as to the reason for Salisbury's departure from England, is discredited by Froissart and his editor (Kervyn 4. 273, 458-461; cf. *Dict. Nat. Biog.* 17. 56). Jean le Bel is certainly inaccurate in saying that Salisbury perished at the siege, since he died in England on Jan. 30, 1344.

[3] Rymer. On March 24, 1344, Edward grants power to Derby and Arundel to treat with Alfonso. On May 30 Edward congratulates Alfonso on the conquest of Algeciras, as he had done June 12, 1341, on the victory at Salado (see above, p. 217). In a letter to Alfonso, dated Aug. 12, 1344, Edward III speaks of the desire he had cherished to take part himself in the siege of Algeciras, and to visit Compostella, and touches upon Derby's plan of rejoining Alfonso's forces, on which account the king had communicated to Derby his thoughts concerning the resumption of a project for the union of Alfonso's eldest son (Peter the Cruel, then 11 years of age) with Edward's eldest daughter (Isabella, aged 12); Derby, however, had abandoned his plan on hearing of the surrender of Algeciras. On Sept. 10 of the same year, Edward, in accrediting certain commissioners to Alfonso, refers to Derby's having, when lately in Spain, broached the idea of such a union with one of Edward's daughters, and relates that Derby and the Earl of Arundel, being bound for Spain [spring of 1344?], the king had bestowed upon them authority to treat concerning the matter, but that the capture of Algeciras had had the effect above described.

For the sojourn of the two earls in Spain, we are almost wholly dependent upon the *Cronica,* the relevant parts of which are here presented in a somewhat condensed translation:

I[1]

> And the Earls of Derby[2] and Salisbury, men of prominence in the realm of England, came to the war against the Moors, like many others from foreign countries, for the salvation of their souls, and to see and know the king. . . . And these earls, being at Villa Real, heard how the Moors were to fight with the King of Castile on a certain day. Accordingly, they both traveled as fast as their palfreys could carry them, and arrived at Seville in a very few days, though all who started with them failed on the way, and were unable to complete the journey, save four knights only. And when they arrived at Seville, they were at the house that the company of the Bardi kept there, and sought how they might reach the camp with additional knights, if possible; if not, then at least they themselves. . . . When they arrived, they learned that the King of Granada and the Moors were near the Guadiaro river,[3] and that there was no fixed day for the battle. And on this account they awaited their troops there, in the meanwhile sending their men to headquarters to announce their coming to the king, and to have houses constructed against their arrival. When the troops arrived, they all left Seville for the royal camp. Here the king welcomed them, and was much pleased with them; for they were valiant knights, bringing with them brave companies, and had been at many hotly contested battles. In blood the Earl of Derby stood the higher, being of royal lineage[4]; but the Earl of Salisbury had taken part in many battles, in one of which he had lost an eye.

II[5]

> And the king [Alfonso] went out to receive them [Gaston de Foix and his brother],[6] and paid them much honor, and commanded that dwellings be assigned them apart from the other camps, and near where the Earls of Derby and Salisbury were dwelling[7]; for one reason, so that they might be further removed from the city, and, for another, that they might be free from annoyance by the Castilian troops.

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[1] *Cronica,* pp. 541-2.

[2] Always written 'Arbi.'

[3] Alfonso received word of this on May 3 (*Cronica,* p. 539).

[4] He was great-grandson of Henry III, as Edward III was.

[5] *Cronica,* p. 544.

[6] See above, p. 219.

[7] This was the end of June, so that the two earls must have arrived before that date, and after May 3 (see above, p. 222, note 1).

III[1]

In order to the construction of this fort [a third fort for the siege of Algeciras], a large number of soldiers kept guard over those who were at work. And the Moors in the city, being much disturbed over the building of the fort, would sally out to engage the Christians, in order to make an end of it. During these conflicts many, both Christians and Moors, were wounded and slain. It happened that one day, when the Moors issued forth to fight with the Christians, the Earls of Derby and Salisbury armed themselves and all their companies, and took part in the conflict. At that moment the Castilian knights who were on guard had vanquished the Moors, and driven them into the city; but the earls and their companions made their way to the city-gates on the side of the army, where the encounter had taken place, and advanced so far that they thrust with their lances at the Moors who were in the trench and behind their walls. Then all the Moors in the city ran thither and sallied forth, and there was a great battle with them. The Earl of Derby was wounded in the face with an arrow,[2] and two of his knights were slain, but the Moors were forced back into the city.

IV[3]

And he [Philip III, King of Navarre[4]] arrived at headquarters in the month of July. . . . They of France and Gascony joined

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[1] *Cronica,* p. 546.

[2] Cf. the *Poema de Alfonso Onceno* (*Bibl. de Autores Españoles* 57. 545-6), stanzas 2274, 2279-81:

Un buen conde fue armado,
De Moros grand enemigo,
Arbit era su condado,
Deste conde que bos digo. . . .
Bien lidiaron los paganos,
Bien ferian a rreueses,
Los Castellanos llegaron
Por bandear los Ingleses.
E los Moros ençerraron
Con su alcayde fardido,
E los Ingleses tornaron
Con el conde, mal ferido.
Dieronle tres saetadas
Los ballesteros clareses,
Fueronse a sus posadas
Con el conde los Ingleses.

[3] *Cronica,* p. 550.

[4] He fell ill, left the camp in September, and went to Jerez de la Frontera (source of sherry) where he soon died (*Cronica,* pp. 587-8;

[in encamping] the King of Navarre and the Count of Foix, and they of England and Germany the Earls of Derby and Salisbury, because of the long and great war between the King of France and the King of England, in which the Germans assisted the English king.

V[1]

One day at the beginning of August, there entered companies of foot-soldiers from outside the kingdom into the barrier that the Christians had made, and began to fight with the Moors of the city between the villas. Which when the king had seen, he realized that if they were not succored they were in peril of death, for the Moors were numerous, and more were pressing out of the city. Accordingly, he ordered some of his troops to arm themselves and enter the mellay, in order to rescue these men. And those to whom the king gave commandment went thither, but could not effect the rescue, for the Moors fought them as they had done the others. Then the Earls of Derby and Salisbury, with other Englishmen and Germans, being at hand, armed themselves, and eagerly took part in the fray; upon which the Moors of the city, horse and foot, issued forth to the field, and the combat between them was fierce. Now the Christians who engaged did not stand firm with the earls, but abandoned them, like men who had entered inconsiderately into the battle. The king, seing this, commanded that all those within the barrier should arm, and reinforce the Christians; and this they did. After they had come together from each side, the Moors fled into the city, while the Christians continued to fall upon them until they had pursued them inside, and slain many of them in the trench. In this way many of the Moors were killed and wounded; and they fled in such haste, and in such great disorder, that two Christian Englishmen were carried along with them into the city.[2] Thereupon, certain Moors who saw them supposed that they were more in number, and were much afraid that they had lost the city. But when they discovered that there were only two, they tried hard to capture them, and placed guards at the city-gates. And the Christians who took part in the combat stayed near the city, and laid waste the fine gardens which the Moors had between the two villas, and which they maintained in great estate. But the king commanded them to

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Kervyn 22. 267). His own physician had insisted on wine and a liberal diet, while those of Alfonso were in favor of keeping him low; and it was the former that he followed.

[1] *Cronica*, pp. 551-2.

[2] Cf. Jean le Bel 1. 49: 'Les crestiens perdoient plus souvent que les Sarrasins aux paletis et aultres armes, car ilz s'abandonnoient trop à la folie pour avancer leur honneur envers les grands seigneurs et les barons qui là estoient venus de tous pays comme pelerins.'

leave the barrier, because many arrows were shot at them from both the villas, wounding numbers of men and horses; and this they did.

VI[1]

In this month of July, the King of Granada sent as messengers to the King of Castile those whom he had sent on a former occasion. . . . And when these envoys reached the palace, there were with the king the King of Navarre and the barons of his realm, the Earls of Derby and Salisbury, the Count of Foix, etc.[2]

VII[3]

And because the fleet of the King of Morocco was in the port of Ceuta awaiting the King of Granada's fleet, the King of Castile sent his admiral, Don Egidio, with fifteen galleys, to the port of Ceuta; and with him in these galleys were the Earls of Derby and Salisbury, and all their companies. . . . [No battle was fought.] And the next day they were at the port of Algeciras, where was the King of Castile with his army.

VIII[4]

The Earls of Derby and Salisbury came[5] to speak with the king, and told him that the King of England, their lord, had sent them

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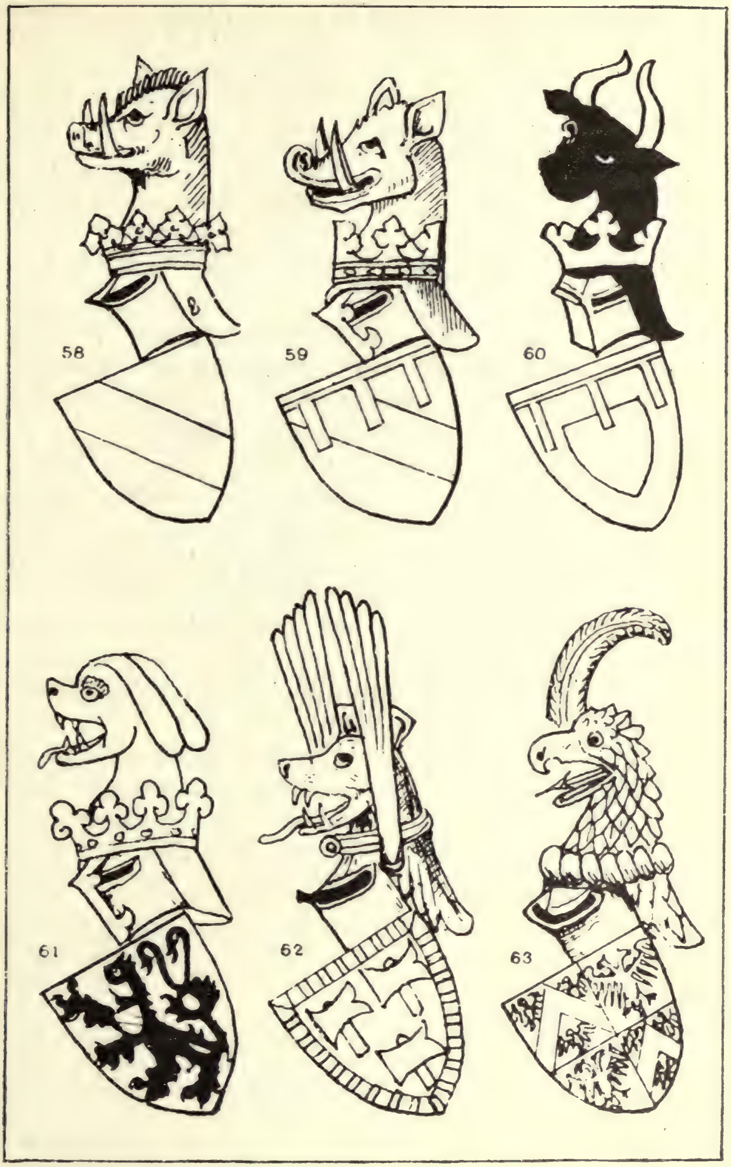
[1] *Cronica,* p. 555.

[2] These envoys had a novel experience while they were being conducted through the encampment (*Cronica,* p. 556): 'At length they came to the quarters occupied by the earls and the other foreigners. Each of these had his helmet placed on a stout and high pole at the door of his house, and all bore figures of various kinds. One represented a lion, another a fox, a wolf, an ass's head, an ox, a dog, or other animal. Some had a man's head, with face, and hair, and beard. These figures were all so well made that they seemed alive. Again, others had the wings of eagles or ravens. In all there were not fewer than six hundred such helmets. And the Moors, seeing them, marveled greatly at the host of people which the King had there.' Cf. Schirrmacher 5. 230, and see the accompanying plate, taken from the armorial of Guelders Herald, as reproduced in Kervyn 23. 465 ff. The arms are those of the following persons: 58, Jean de Roye; 59, Renaud de Roye; 60, the Sire de St. Venant; 61, the Sire de Sempy (or St. Py); 62, the Sire de Sombernon; 63, the Sire de la Trémoille. Of these, Renaud de Roye and the Sire de Sempy were two of the three challengers at St. Inglevert (cf. above, p. 207), Boucicaut (*ib.*) being the other. Renaud was the organizer of the jousts.

[3] *Cronica,* pp. 567-8.

[4] *Cronica,* pp. 568-9.

[5] Perhaps late in August; cf. Schirrmacher 5. 231.


58
59
60
61
62
63

Arms of French Knights

> to say that the King of France and he had established a truce and peace between themselves for three years,[1] and that, with reference to certain matters that they had to settle, power had been given from the King of England to the Earl of Derby. Hence it was necessary that he should be at the Court of Rome by a certain day, and that God knew it grieved them much to depart at this time, for their desire was to remain with the king until the Moors came to battle, or till the king was able to recover the city of Algeciras. And when the king had listened to them, he thanked them heartily for their words, and for the service they had performed, adding that they were at liberty to depart when they pleased. And so they took their leave,[2] great friends of the king.[3]

Belmarye. Froissart's *Bellemarine, Belmarin, Bellemari.* Rather the name of a tribe, the Bene-Marīn, than a territory. This tribe flourished between 1213 and 1524, so that this period has been called the Marīni, or Merinide period, succeeding to that of the Almohades. Having already possessed Eastern Morocco, or the kingdom of Fez, they annexed Western Morocco, or the kingdom of Marrákesh, by 1258. They conquered Tlemçen in 1337, under Ali V, or Abu-'l-Hassan (reigned 1331-1351), and occupied it till 1359, when it reverted to the Beni Zeeyán, from whom it had been wrested, and remained in their possession till 1553.[4]

Of Yakub II (reigned 1258-1286) it is said that he had much friendly intercourse with Europe.[5]

Abd-el-Aziz I (reigned 1366-1372) 'entertained relations with Edward the Black Prince, who then ruled at Bordeaux'[6] (hence between 1366 and 1370?); possibly it is from this intercourse that Chaucer's notions of Morocco may have proceeded.

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[1] But this had been done on Jan. 19 (*Dict. Nat. Biog.* 17. 57).

[2] Derby is said to have returned to England about Nov. 1 (*Dict. Nat. Biog.* 26. 102).

[3] Cf. *Cronica,* p. 571: 'And when the Moors came to Gibraltar (September ?), the Earl of Derby had been gone for some days, and the Earl of Salisbury had remained ill at Seville.'

[4] Meakin; *Encyc. Brit.,* 11th ed., 18. 856.

[5] Meakin, p. 94. He adds: 'On one occasion the river at Salli was so full of foreign ships that there were said to be more strange sailors there than resident natives, so during Ramadán the foreigners seized the town, entering by a breach in the wall, though after fourteen days the Moors retook it.' He also tells of a descent made by foreigners on Laraïche (a seaport on the Atlantic) in 1270 (*ib.,* note). The wife of Ali V seems to have been a Christian. She died in 1349-50, and a beautiful tribute to her memory is printed by Meakin (pp. 104-5).

[6] Meakin, pp. 105-6.

Chaucer's Belmarye is, then, Morocco. Palamon is compared to a lion of that country (*K. T.* 2630-33):

> Ne in Belmarye ther nis so fel leoun,
> That hunted is, or for his hunger wood,
> Ne of his praye desireth so the blood,
> As Palamon to sleen his fo Arcite.

Lyeys, early October, 1367. Froissart's[1] and Marco Polo's[2] *Layas,* Ariosto's[3] *Laiazzo,* also known as *Ayas, Ayacio, Aiazzo, Giazza, Glaza, la Jazza,*[4] *l'Ajasso, la Giazza,*[5] *l'Aïas,*[6] is perhaps most properly called *Ayas,* a name derived from Lat. *Ægæ,* Gr. Αἰγαί.[7] It lies in the vicinity of Issus, famous for the battle between Alexander and Darius. Ayas is on the bay of the same name (*Cent. Atlas,* map 101, F 4), opening out of the western part of the Gulf of Alexandretta, or Scanderoon, in the mediæval kingdom of Lesser Armenia. In the latter part of the 13th century it became one of the chief places for the shipment of Asiatic wares arriving through Tabriz.[8] As Marco Polo says[9]: 'All the spicery [spices, drugs, dye-stuffs, metals, wax, cotton, etc.[10]], and the cloths of silk and gold, and the other valuable wares that come from the interior, are brought to that city. And the merchants of Venice and Genoa, and other countries, come thither to sell their goods, and to buy what they lack. And whatsoever persons would travel to the interior (of the East), merchants and others, they take their way by this city.'[11] Conquered from the Christians by the Arabs of Egypt in 1322, but rebuilt after 1323, it was recaptured by the Egyptians in 1347.[1] After Pierre I of Lusignan, King of Cyprus (reigned 1359-1369), had captured Satalia on Aug. 24, 1361, the Emir of Ayas hastened to make his submission to him.[2] About the beginning of October, 1367, Pierre appeared before Ayas, where he had expected to meet Hayton, the King of Lesser Armenia. His mission was to capture Ayas from the Saracens, but, though he expelled them from the city, he was unable to gain the castle, and so returned to Cyprus.[3] On this expedition, the Earl of Hereford (see pages 182, 233) was with him.[4]

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[1] Kervyn 20. 567.

[2] *Prol.,* chap. 8.

[3] *Orl. Fur.* 19. 54. 1 (cf. 20. 58).

[4] Marco Polo 1. 16.

[5] *Bibl.,* p. 310.

[6] Le Roulx, p. 23.

[7] Pape, *Wört. der Gr. Eigennamen* 1. 28.

[8] Marco Polo 1. 16; cf. Le Roulx, p. 67.

[9] Bk. 1, chap. 1.

[10] 1. 45.

[11] Cf. *Bibl.,* pp. 310, 311, 315, 319, 323; Marco Polo, p. 41; cf. Heyd 1. 404, 598-9; 2. 79-81, 85-6, 88-94.

Satalye, August 24, 1361; between June and September, 1367. Also known as *Adalia* (*Antalia*), the ancient *Attalia,* Gr. Ἀτταλεία. It lies between capes Khelidonia (Chelidona) and Anémour (Anamour), on the southern coast of Asia Minor, (*Cent. Atlas,* map 101, D 4), and has about 25,000 inhabitants. It is the capital of the sanjak of Tekké-ili. Beaufort, writing in 1817, thus describes it[5]:

> Adalia is beautifully situated round a small harbour[6]; the streets appear to rise behind each other like the seats of a theatre; and on the level summit of the hill, the city is enclosed by a ditch, a double wall, and a series of square towers about fifty yards asunder.[7] . . . The port is inclosed by two stone piers, which once had towers on the extremities; but they are now in a ruinous state. . . .
>
> The gardens round the town are beautiful; the trees were loaded with fruit[8]; all kinds of vegetation seemed to be exuberant; and the inhabitants spoke of their corn grounds as more than commonly productive. The soil is deep, and everywhere intersected by streams

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[1] Heyd 2. 93-4; cf. *Bibl.,* p. 318.

[2] Le Roulx, p. 119 (cf. p. 118); *Bibl.,* p. 495 (cf. pp. 490, 491).

[3] Le Roulx, p. 139; *Bibl.,* p. 517; Machaut 6964 ff. At length, in 1375, Ayas lost whatever independence it had possessed (Heyd 2. 94).

For maps of Ayas, see Marco Polo, opp. p. 44; for pictures, see Langlois, *Voyage dans la Cilicie,* pp. 230-2; Beaufort, p. 240; Marco Polo 1. 16; Laborde, *Voyage de l'Asie Mineure,* p. 132.

[4] Machaut, p. 229.

[5] Pp. 126-130.

[6] Cf. Hastings, *Bible Dict.* 1. 208.

[7] See the more particular description in *Bibl.* 1. 493.

[8] Orange, lemon, fig, and mulberry trees, besides vineyards (*Bibl.,* p. 492; Larousse, *Encyc.*).

> loaded with calcareous matter, which, after fertilizing the plain, fall over the cliffs, or turn the corn-mills in their descent to the sea.
>
> Alternate breezes refresh the air in a remarkable manner[1]; for the daily sea-breeze sweeps up the western side of the gulf with accumulated strength; and at night, the great northern valley which appears to traverse the chain of Mount Taurus, conducts the land wind from the cold mountains of the interior. Upon the whole, it would be difficult to select a more charming spot for a city.[2]

In the Middle Ages, Satalia was the most important place on the southern coast of Asia Minor, having regard to its strength and commerce,[3] though it did not equal Ayas.[4] It lay in the empire of Iconium, Roum, or Turkey, whose sultan, with his capital at Konieh (Coyne), was the richest monarch in pagandom, according to Joinville[5]; and Iconium formed the eastern part of Asia Minor, as Romania, belonging to the Greeks of Constantinople, formed the western part, from Mount Olympus to the Taurus.[6]

In August, 1361, Pierre I, King of Cyprus, sailed from Cyprus to Satalia with a fleet of about 119 vessels. Here he arrived on the 23d, and at dawn of the next day advanced with scaling-ladders and arblasts to the assault. Cutting down all who opposed, the army was soon within the walls and in possession of the castle, before the emir, named Tacca,[7] who had remained outside the city in order to fall on the army's rear, was in a position to attack it. Finally he succeeded in entering the city by an underground passage, but seeing the Christian helmets on the walls, and Christian banners floating from the towers, he regained his main force.[1] A few lines from Machaut paint the situation[2]:

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[1] Mas Latrie (*Bibl.*, p. 493) says that the mountains in the vicinity keep off the breezes, so that the heat is excessive and dangerous.

[2] The best modern description is by Lanckoronski, *Städte Pamphyliens and Pisidiens* 1. xi, 6-32, 153-163, with maps and pictures. See also the view in Beaufort, opp. p. 126. Roger of Hoveden, at the end of the twelfth century, has a brief description (Bohn tr. 2. 248). Richard I was in the Gulf of Satalia on May 1, 1191 (Stubbs, p. 161).

[3] *Bibl.*, pp. 326, 492; cf. Heyd 1. 335-6, 598-9; 2. 355-6, 543.

[4] Heyd 1. 598.

[5] *Hist. de Saint Louis*, ed. de Wailly, § 141. For the commerce, see *Bibl.*, pp. 304-5, 307, 315, 323, 329. For the harbor, see Pauly-Wissowa, p. 2156. For legends concerning the Gulf of Satalia, see Roger of Hoveden (Rolls Series 3. 157; Bohn tr. 2. 248-9), who derives from Benedict of Peterborough (ed. Stubbs, 2. 195-7); cf. Stubbs, p. 148.

[6] *Bibl.*, p. 302; cf. Roger de Hoveden, Bohn tr. 2. 249-250.

[7] Perhaps from the name of the country that he governed.

> Il s'en ala, lui et sa gent,
> Parmi la haute mer nagent,
> Tant qu'il vint devant Satalie,
> Une cité qu'est en Turquie,
> Grande et puissant et ferme et forte.
> Mais il n'i ot ne mur ne porte
> Ne gens qui la peüst deffendre,
> Que li bons rois ne l'alast prendre
> Et destruire et mettre à l'espée.
> Et si l'a toute arse et bruslée.
> La veïst on maint drap de soie
> Et de fin or qui reflamboie
> Ardoir; et mainte dame belle,
> Maint Sarrazin, mainte pucelle,
> Maint Turc, et maint enfant périr
> Par feu, ou par glaive morir.

In this expedition he was accompanied by an English force, or a force under an English knight, named Robert of Toulouse.[3]

The Saracen troops under Tacca had caused much annoyance to Satalia during the half dozen years following upon its capture by Pierre.[4] On March 26, 1367, Pierre succeeded in suppressing a rebellion which had broken out in the city.[5] Between June and September, 1367, and before proceeding to the capture of Tripoli and Ayas,[6] the king invited Tacca to meet him in Satalia. Here Tacca offered him rich presents, and obtained from him a confirmation of the existing treaty of peace.[7] At this meeting there were present two Englishmen—the Earl of Hereford and Sir William Scrope. Sir Richard Waldegrave testified in 1386[8]:

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[1] *Bibl.*, pp. 493-4; Le Roulx, p. 119; Stubbs, p. 193.

[2] 643-658.

[3] Stubbs, p. 193. As the name sounds suspicious, and as he is desirous to save the honor of the English nation, Stubbs suggests that he was a Continental subject of the Plantagenets.

[4] *Bibl.*, pp. 495-500, 506; Le Roulx, pp. 119-120, 123.

[5] *Chronique de Strambaldi* (ed. Mas Latrie), pp. 79-80; Amadi, pp. 446-7.

[6] See above, p. 230.

[7] *Bibl.*, p. 517; Le Roulx, p. 138; Strambaldi, p. 83.

[8] *Scrope and Grosvenor Controversy*, ed. Nicolas, 2. 377.

> And also beyond the Great Sea he saw Sir William Scrope so armed, with a label, in the company of the Earl of Hereford at Satalia in Turkey, at a treaty which was concluded between the King of Cyprus and 'le Takka,' Lord of Satalia, when the King of Cyprus became Lord of Satalia.

This earl was Humphrey X, Earl of Hereford from 1361 to 1372,[1] the father-in-law of Henry, Earl of Derby. He was also present at Ayas.[2] Sir William Scrope, who, according to Nicolas, almost realized Chaucer's beau ideal of a knight,[3] was probably the same who, according to the testimony of Sir Alexander Goldingham,[4] was with Hereford in Lombardy previous to this.

Grete See. Though Yule[5] thinks the Black Sea is here meant, the term is usually understood of the Mediterranean.[6]

Tramissene. Froissart's *Tramessaines, Tremessaines.*[7] In Arabic it is known as *Talimsán,* and otherwise generally as *Tlemçen.* The kingdom of Tlemçen included a considerable territory in what is now western Algeria, including Oran.[8] The city has some remarkable remains of Moorish architecture.[9] Of the period between 1282 and 1337 we are told (*Encyc. Brit.* 26. 1035): 'Under their sway [that of the Abd-el-Wahid] Tlemçen flourished exceedingly. The presence of Jews and Christians was encouraged, and the Christians possessed a church. The bazaar of the Franks was a large walled enclosure, the gates of which were closed at sunset. As many as 5000 Christians lived peaceably in Tlemçen, and the Sultan included in his army a Christian bodyguard.'

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[1] *Dict. Nat. Biog.*

[2] See above, p. 230.

[3] *Scrope and Grosvenor Controversy* 2. 105 (cf. 2. 106).

[4] *Scrope and Grosvenor Controversy* 2. 228 (cf. 2. 107); *Dict. Nat. Biog.* 51. 138. For Satalia in relation to Amurath I (1386), see Hammer-Purgstall 1. 200.

[5] Marco Polo 1. 3.

[6] Gower, *Conf. Am.* 3. 2487-90; 4. 1620-37; Mandeville, ed. Halliwell, p. 259; Hertzberg, p. 579.

[7] Still *Tremesin* as late as 1517 (Brewer, *Reign of Henry VIII* 1. 277).

[8] See the map in Meakin, opp. p. 80.

[9] See *Encyc. Brit.*, 11th ed., 26. 1034.

Peter the Cruel (ruled 1350-69) of Castile was reported to have formed a treaty of alliance with the kings of Belmarye and Tramissene in 1366, or thereabouts.[1] Such rumors as the following were current:

> And, besides all this, there ran a bruit of him among his own men how that he was amiably allied with the king of Granade and with the king of Bellemarine and the king of Tremesen, who were all God's enemies and infidels: wherefore some of his own men feared that he would do some hurt to his own country, as in violating of God's churches, for he began already to take from them their rents and revenues, and held some of their prelates in prison, and constrained them by tyranny.[2]

After the coronation of Henry of Trastamare in 1366, his army, estimated at 60,000 men, well armed and mounted, announced their intention, after subduing Castile, to invade Granada and Belmarye, thereby causing great fear among the Saracens.[3] Before entering Spain for the support of Henry, the captains of the companies sent a herald with letters to Peter, requesting to be allowed, as pilgrims, to pass through his dominions on their way to Granada and Belmarye, whither they were bound for the destruction of the infidels.[4]

In 1382 it came to the ears of the English serving in Spain with the Earl of Cambridge that the King of Granada was warring against the Kings of Barbary and Tramissene, and that they were welcome to take service with him for the campaign. Several Frenchmen on the ground availed themselves of this offer, but only a few Englishmen, the greater part returning to England with the earl.[5]

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[1] Mérimée, *Hist. de Don Pèdre Ier*, p. 425; Kervyn 7. 264; 17, 459; cf. Ibu-Khaldoun, *Hist. des Berbères* 4. 380.

[2] Kervyn 7. 86. See also the fantastic story told by Cuvelier (*Chronique de Bertrand du Guesclin* 14426-35, 14503-6, 14549-51, 14597-622, 15255-6, 15275-421, 15957-80; cf. 9076, 9293, 9568, 9904) about the journey of Peter into Belmarye to secure aid for the relief of Toledo early in 1369.

[3] Kervyn 7. 93.

[4] Kervyn 17. 425.

[5] Kervyn 9. 492. It is interesting to note that, by a charter of Peter's, dated Sept. 23, 1366, he accorded to the English the privilege of being the first to engage the Moors in any battle with the King of Granada (Kervyn 20. 515).

Palatye, 1365, 1390. Also known as *Palatscha, la Palizia,*[1] Turkish *Balat.*[2] It occupies the site of the ancient Miletus, on the left bank of the Meander, not far from its mouth[3] (*Cent. Atlas,* map 101, B 4). It derives its name, 'the palaces,' from the ruins found in the vicinity.[4] As the form *Palatscha* and the derivation show, the word should be stressed *Palátia,*[5] not *Palatía.* Pegolotti calls it *Palattia di Turchia.*[6] It carried on commerce with the Rhodians, the Cypriotes, the Genoese, and the Venetians. Within or near the city there was, in the fourteenth century, a church of St. Nicholas. Its emir was a Seljuk Turk, under whom slaves were dealt in and piracy practised, and who had coins struck with Latin inscriptions, like the *gigliati* (with a lilied cross) minted in Naples, for use in the trade with Italy.[7] At what stage the emirates of Palatia and Mentesche (the ancient Caria) were united is uncertain—evidently as early as 1403,[8] and probably much before. In about September of 1365, when Pierre de Lusignan was preparing to sail for the conquest of Alexandria (see above, p. 216), he received ambassadors from Palatia at Rhodes, and concluded a treaty with the emir, by which the latter agreed to pay tribute for the safeguarding of his cities and castles.[9] In 1390 Bayezid extended his sway over this region,[10] and some time after an embassy was sent from Palatia to Tamerlane, which exhorted him to take the field against Bayezid.[11] After the battle of Angora in 1402, in which Tamerlane conquered Bayezid, he reinstated the emirs whom Bayezid had expelled.[1] He granted an interview to the sons of the Emir of Mentesche, who had fled from fear of Bayezid, and taken refuge at Sinope; but in the meantime their territory had been ravaged by Tamerlane's skirmishers.[2] The emir whom Tamerlane reinstated was Elias Beg, whose father[3] and brother[4] were both named Mohammed. It is not improbable, then, that the emir whom Bayezid expelled in 1390 was Elias Beg,[5] though, since the latter lived till 1425, it may possibly have been his father, Mohammed. Whichever it was, it seems to be the relation between the emir and Bayezid that Chaucer had in mind in the lines of the *Prologue* which follow—in other words, between a Seljuk and an Ottoman Turk; and, since any hostilities must have taken place in 1390, this was early enough for Chaucer to have heard of them.[6] He might also have been informed, through Henry, of the offer made by Boucicaut and his friend, Renaud de Roye,[7] to Amurath I, father of Bayezid, in the spring of 1388, that they would assist him in any wars against the Saracens.[8]

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[1] *Bibl.,* p. 502.

[2] Heyd 1. 594.

[3] Heyd, *ib.* Mas Latrie (*Bibl.,* pp. 325, 502) says that it lies north of the ruins of Miletus; others that it represents the ancient Myus (Leake, *Journal of a Tour in Asia Minor,* p. 239; Forbiger, *Handbuch der Alten Geographie* 2. 214; Hertzberg, p. 580).

[4] Chandler, *Travels in Asia Minor,* p. 146; Spon and Wheler, *Voyage d'Italie* 1. 211.

[5] Leake, *op. cit.,* p. 240.

[6] *La Pratica della Mercatura* (in Pagnini, *Della Decima,* Vol. 3), pp. 94, 370.

[7] Heyd 1. 594-6.

[8] Heyd 2. 353-4 (cf. 1. 595).

[9] *Bibl.,* p. 502; *Chronique de Strambaldi,* under A. D. 1365.

[10] Heyd 2. 353; Hammer-Purgstall 1. 221; cf. Le Roulx, p. 388.

[11] Heyd. *ib.*

From the historical background which we have attempted to sketch, a few forms stand out with peculiar clearness. These are, almost without exception, personages of high rank, and among them none, perhaps, rivet our attention more than two men of royal blood[1]—the elder Earl of Derby, who died as Duke of Lancaster, and his grandson, the younger Earl of Derby, who died as Henry IV. Chaucer's Knight is a typical, in some sense a composite, figure, to which no one contributed more noble traits than did the knight whom Petrarch[2] ranked with the greatest worthies.[3] He was a sexagenarian[4] when Chaucer served as a subaltern in the army of which he himself was a general, but the praise of his earlier achievements was doubtless still fresh in men's mouths. He was one whom the king delighted to honor, and in whom chivalry saw its highest ideals incarnated, so far as human imperfections allow.

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[1] Heyd, *ib.*

[2] Hammer-Purgstall 1. 330-1.

[3] Heyd 2. 354, note 3.

[4] Heyd, *ib.;* Hammer-Purgstall 1. 424.

[5] Heyd 2. 353.

[6] That information of the affairs of the East was current in the higher circles of England at this time, is clear from the letter addressed by Henry IV to Tamerlane in 1402 (or possibly 1403), congratulating him on his victory in that year over Bayezid, whom he calls 'our enemy and yours' (Ellis, *Orig. Letters* 3. 1. 57), and from the treaty concluded between the two sovereigns (Le Roulx 1. 391).

[7] See above, p. 226, note 2.

[8] Le Roulx 1. 163. Cf. the *Livre des Faictes,* Bk. 1, chap. 16: 'Si s'en allerent apres devers luy [to Gallipoli], et il les receut à grand feste, et leur fit tres-bonne chere, et ils luy presenterent leur service, en cas que il feroit guerre à aucuns Sarrasins. Si les en remercia moult Amurat; et demeurerent avec luy environ trois mois: mais pource que il n'avoit pour lors guerre à nul Sarrasin ils prirent congé, et s'en partirent.'

If the crusading exploit by which Lancaster is best known was performed in the South,[5] that of his grandson belongs to the far North, from which the latter doubtless brought the reports of the table of honor which supplied Chaucer with an immortal distich. In age, religious devotion, modesty, and variety of achievement, Chaucer's Knight stands nearest to the father of John of Gaunt's beloved Blanche. When Chaucer would utilize the son of Blanche as a more complete model, it is as his dashing and splendid young king in the *Knight's Tale*.[6]

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[1] Lounsbury (1. 93, note) derives an argument from Chaucer's use of the word 'worthy' (*Prol.* 68) in favor of the poet's having had Henry in mind in his portrayal of the Knight's character; and one might analogically use the word 'sovereyn' (*Prol.* 67), which it is well known was Henry's motto (Wylie 4. 115-6), for the same purpose.

[2] See above, p. 221.

[3] On the authority of Capgrave (*Dict. Nat. Biog.* 26. 102), he is said 'to have gone while a young man to fight as a crusader in Prussia, Rhodes, Cyprus, and Granada, to have been so renowned a captain that he was known as "the father of soldiers," and the noblest youths of France and Spain were anxious to learn war under his banner.'

[4] This agrees with Manly's estimate of the Knight's age (*Trans. Amer. Phil. Assoc.* 38 (1907). 104).

[5] An interesting connection between the older and the younger man, of whom one died five years before the other was born, is suggested bv the feeling of the lords who heard Henry's sentence pronounced by Richard II, that he might do well to 'faire ung voiage en Grenade et sur les mescroians' (Kervyn 16. 108: Johnes' Froissart, 1839, 2. 666; cf. Kervyn 16. 132: Johnes 2. 674-5).

[6] Earlier scholars have thought of adventurous knights of less exalted rank. Thus Tyrwhitt in 1775 (*Cant. Tales* 4. 190) refers to Sir Matthew

Gourney (cf. Leland, *Itinerary*, ed. L. T. Smith, pp. 159, 297; *Dict. Nat. Biog.* 22. 291-2; Cuvelier, *Chronique de Du Guesclin* 2. 597; Kervyn 21. 442); but neither he, nor Sir Hugh Calverley (*Dict. Nat. Biog.* 8. 262-3; Kervyn 5. 289-295; 17. 281-4; 20. 493-4; 23. 421; Ormerod, *Hist. Cheshire* 2. 766-8; Cuvelier, *op. cit.* 2. 590), nor any of the Scropes (above, pp. 204, 217, 233; Manly, *op. cit.*, pp. 104, 107), sufficiently fulfils the conditions.

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TRANSACTIONS OF THE
CONNECTICUT ACADEMY OF ARTS AND SCIENCES

VOLUME 20, PAGES 241-399 APRIL, 1916

Rural Economy in New England at the Beginning of the Nineteenth Century

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NEW HAVEN, CONN.
1916

THIS ESSAY WON THE JOHN A. PORTER PRIZE
YALE UNIVERSITY, 1915

COMPOSED AND PRINTED AT THE
WAVERLY PRESS
BY THE WILLIAMS & WILKINS COMPANY
BALTIMORE, MD., U. S. A.

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PREFACE.

The following chapters are a part, only, of a larger work which I have undertaken, a history of the changes in the rural economy of New England in the nineteenth century. In broad outline such a history falls into three periods: (1) The period of self-sufficient economy, which had existed since the settlement of the country, reaching the highest point of its development at the beginning of the nineteenth century; a period in which the characteristic features of rural economy were the absence of any market for farm produce and the consequent dependence of each town and, to a large extent, of each household, even, on its own resources for the satisfaction of its wants. (2) The period of transition to commercial agriculture, under the stimulus afforded by the rise of manufacturing enterprises in inland towns and villages and the consequent demand for food and raw materials on the part of the newly-arisen non-agricultural population; the years included in this period being approximately the two generations from 1810 down to the close of the Civil War. (3) The period of the decadence of New England agriculture, extending from the close of the Civil War to the end of the nineteenth century; a period in which the increasing pressure of Western competition caused the abandonment of large numbers of New England farms and a decline in both the quantity and quality of the rural population. It was thus that the Rural Problem of New England arose. From an appreciation of the importance of the problem have arisen organized efforts looking toward its solution, toward an economic and social rehabilitation of rural life in this region.

The chapters here presented constitute a survey of the rural economy of the three states of southern New England at the close of the first period.

I desire to make acknowledgment of the courtesies extended to me by the librarians of the American Antiquarian Society, the Connecticut Historical Society, and of the Harvard and Yale University libraries. My thanks are due also to various members of the Department of Economics of the Graduate School of Yale University, and also to Professor F. W. Taussig of Harvard University, for encouragement and helpful suggestions.

In a very especial manner I am indebted to the late Professor Guy S. Callender, of the Sheffield Scientific School of Yale University, who directed my researches in this field. Without his helpful advice, his illuminating criticism and his stimulating companionship this book could not have been written.

PERCY WELLS BIDWELL.

New Haven, January 1, 1916.

INTRODUCTION.

It is the purpose of this essay to analyze the economic conditions of life in inland towns in southern New England a century ago, with a view to showing in what way, and to what extent, these conditions were effective in shaping the peculiar features of home and community life of this region at the time. In other words, it is our aim in the first place to discover what were the most important circumstances which affected the ability of the inhabitants of these towns to produce wealth, that is, to satisfy their wants, to get a living; and in the second place, to show in what ways these people sought to adapt themselves to their circumstances so as to satisfy their wants most easily, to get the best living possible.

The townships into which the area of Massachusetts, Rhode Island and Connecticut was at this time divided were more than convenient geographical divisions for administrative purposes; they were units of economic and religious as well as of political life. Inside these economic microcosms, these cells of the social organism, there were developed distinctive individual habits and characteristics, and distinctive social customs. The stern austerities of New England character have often caused comment and discussion, as have also the remarkable energy, industry and ingenuity of its people. So also the peculiar unity and cohesion of their social and religious life are well-known and accepted facts. But the interest of most students and writers in these matters has been that of the mere antiquarian. A detached fact, an isolated idea, concerning the life of the early settlers of this region has been picked up and examined with enthusiastic interest and with a certain kind of appreciation, such as a connoisseur of antiques might display when rummaging for old crockery or furniture through the attic of a farmhouse. Rarely has there been an attempt at real economic history; that is, at an explanation, a synthetic reconstruction of the way in which these people got their living. To do this all these scattered, and of themselves interesting facts must be fitted together, must be brought into some orderly relation showing cause and effect; they must be interpreted in the light of the fundamental principles of economic theory. In this essay such an attempt at reconstruction and interpretation will be made.

As a field for a study in economic history no region offers better opportunities than do the three states of southern New England at the beginning of the nineteenth century. Here we find an "economic province," a territory of uniform life based upon a uniform physical environment, peopled by a homogeneous race, with common descent, common traditions, and common institutions. This uniformity of conditions gives the student the great advantage of being able to draw general conclusions for the whole region from the evidence presented in typical localities. He has, moveover, the advantage of investigating an approximately static condition in economic life. For at least a generation, there had been practically no change in the manner of life of the inhabitants in most of the towns. In many of the older towns there had been little change in 50 or 100 years. The process of pioneering was finished, practically all of the land which was then considered available had been brought under cultivation; in the current phrase, these states were "fully settled." But a great change was impending; soon the familiar, stereotyped ways of doing things, traditional habits of life and of thought were to suffer modification and in a few generations were to disappear almost entirely. The revolutionary force was to come from the rise of manufactures and the growth of a non-agricultural population in the inland towns. It is peculiarly interesting and instructive to examine the economic and social life of these communities at this critical stage in their history.

The general plan of the essay may be outlined as follows: In the first place an analysis of the occupations of the inhabitants of the inland townships will be undertaken. Not only will the relative importance of each trade, business, and profession be determined, but also the nature of the relations existing between each and the agricultural industry will be considered. In other words, this portion, Chapter I, will be devoted to a study of the extent of the Division of Labor in the inland townships.

The second step, Chapter II, will be to determine how far the inland communities thus described were typical of the whole region of southern New England. A search will be made for industrial and commercial towns and the commercial relations between these and the purely rural towns will be considered.

In Chapters III and IV an attempt will be made to find out how far these rural communities engaged in commerce with the inhabitants of regions outside New England. An investigation will be made of the extent of the demand for foodstuffs in the Southern states and in the West Indies. To determine how far this market was supplied by farmers in inland towns, an examination of the conditions of internal trade and of the transportation system in southern New England will be necessary.

Thus far we have been employed in describing the economic conditions, in reconstructing the environment in which the inland farmers found themselves. The second part of the essay, Chapters V and VI, will be devoted to describing the state of the agricultural industry as carried on by inland farmers, and the general features of life in the home and in the community. Finally, these facts will be brought into relation with those of the economic situation that we have described in the first four chapters.

CHAPTER I.

THE INLAND TOWNS AND THEIR VILLAGE SETTLEMENTS.

The typical inland township in southern New England in 1810 was an area of roughly 40 square miles,[1] containing a population of from 1,000 to 3,000 persons. An examination of the Census of 1810 shows us 385 of such towns, out of a total of 437. Of the remaining 52 towns only three[2] had as many as 10,000 people, 11 had between 5,000 and 10,000 and 38 varied from 3,000 to 5,000. More significant than these figures as showing the predominant importance of the smallest towns is the fact that 67 per cent, or more than two-thirds of the total population, lived in these; one-quarter in towns of from 3,000 to 10,000 people, and only about one-sixteenth of the total number in the largest towns.[3] Within the group of the smallest towns, considerable variations in size were to be found. In newly settled or in unfertile regions, such as Berkshire and Worcester counties in Massachusetts, a large proportion of the towns contained from 500 to 1,500 people. On the other hand, in especially fertile districts, as, for instance, in the Connecticut valley,[4] or where an old town had retained a large grant of land unsubdivided, as, for instance, Farmington and Saybrook,[5] the population ranged between 2,500 and 3,000 or above. On the whole, however, we shall find that all the towns in this group which we have selected as the typical inland towns show characteristics which set them off more or less distinctly from the small number of larger towns and so justify the classification.

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[1] The variations from this norm were considerable, especially in the longer settled regions where the older towns had been often subdivided. Some of the towns, also, had acquired and kept unusually large grants of land. Consequently, towns as small as 20 square miles or as large as 70 are sometimes found. The best source of information as to the area of towns at this time is Pease and Niles, Gazetteer of the States of Connecticut and Rhode Island. Hartford. 1819. We have no similar work at this date for Massachusetts, except for individual towns and counties. E. g. Whitney, Peter. History of the County of Worcester. Worcester (Mass.). 1793.

[2] These were Boston, 33,250; Salem, 12,600; and Providence, 10,000.

[3] For fuller statement of these figures see Appendix A.

[4] There were 16 towns along the Connecticut River from Saybrook to Springfield, only two of which had less than 2,500 people.

[5] Both of these towns contained about 70 square miles and profited besides by their location in the Connecticut Valley.

The Villages.

A part of the inhabitants of the inland towns lived in villages, small groups of houses often surrounding the meeting house on the top of a hill in the center of the town, or lying stretched out along a single broad street, or enclosing an open square at the intersection of two highways; the remainder lived in farm-houses scattered over the area of the town outside the village. It was these village settlements which, as President Dwight so clearly pointed out,[1] distinguished southern New England from the Southern states as well as from the frontier regions of the northern parts of New England and from the new communities in the Western states. Resulting originally from a need of protection from the hostile natives and also from the desire to have dwellings convenient to the place of religious worship, these villages became a traditional part of New England life and served to foster the growth of a communal spirit. They made possible compulsory education of children and in general prevented the degeneration in manners and morals which inevitably follows as a consequence of dispersion of people in a new country.[2]

From the point of view of the economic life of the inhabitants, however, these villages were not significant. In the first place, they were not large enough to include any very great proportion of the entire population, and, besides, the occupations of the village dwellers were essentially the same as those of their fellow-townsmen. As regards the size of these villages, contemporary writers have given us an abundance of information. In 1781 Chastellux referred to Lebanon, Conn., as one of the most considerable towns, *i.e.*, villages, in the country (in the rural inland region.) It had 100 houses which were somewhat scattered.[3] The same writer found 50 houses around a large square in Litchfield, Conn.; about the same number collected about a meeting-house in Farmington; in Windham, also in this state, some 40 or 50 houses were seen "pretty near each other," forming a square.[1] The same type of village was seen by Professor Silliman in Lenox, Mass. It had 100 houses gathered about three churches, an academy and a courthouse.[2] Killingworth, Conn., furnished an example of what might be called an "extended village." On its broad main street, six rods wide and one and one-half miles long, were 65 houses. In another part of the town there was a village of 109 houses.[3] From a general survey of such figures as are given in Pease and Niles' Gazetteer it seems that in the great majority of towns the villages contained less than 50 houses.[4]

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[1] Dwight, Timothy. Travels in New England and New York. 4 vols. London. 1823. I. 300–303.

[2] The importance of the services rendered by the country churches in furnishing a social center can hardly be over-emphasized. A clear statement of the nature of these services is found in Adams, Charles Francis. Three Episodes in Massachusetts History. A Study in Church and Town Government. 2 vols. Boston. 1892. II. 750–751.

[3] Chastellux, François Jean, Marquis de. Travels in North America. 2 vols. London. 1788. I. 455. Another French traveler who passed through this town a few years later found 150–160 houses in the village. See La Rochefoucauld-Liancourt, Duc de. Travels through the United States of North America. 2 vols. London. 1799. I. 515.

Occupations of the Village-Dwellers.

An examination of the distribution of land ownership in the inland towns shows that the occupations of the dwellers in these minute nuclei of population, the villages, did not differ essentially from those of their neighbors who lived on scattered farms along the country roads. They were all farmers. In describing the type of village found in the Connecticut Valley, President Dwight says: "The town plat is originally distributed into lots containing from two to ten acres. In a convenient spot, on each of these, a house is erected at the bottom of the courtyard (often neatly enclosed); and is furnished universally with a barn, and other convenient outbuildings. . . . . The lot, on which the house stands, universally styled the home lot, is almost of course a meadow, richly cultivated, covered during the pleasant season with verdure, and containing generally a thrifty orchard."[5] Besides these home lots the village dwellers had outlying fields, which had been apportioned to the heads of the families at the original settlement of the town.[1] On both these tracts they carried on agricultural operations in the same manner and to the same extent as did the farmers outside the village. The only difference between the two types of farmers seems to have been that the village dwellers were at a considerable disadvantage in going back and forth from their houses to their fields.[2]

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[1] Chastellux. Op. cit., I. 48, 38, 23.

[2] Silliman, Benjamin. Remarks on a Short Tour between Hartford and Quebec. New Haven. 1820. p. 39.

[3] See Field, D. D. A Statistical Account of the County of Middlesex in Connecticut. Published by the Connecticut Academy of the Arts and Sciences. Middletown. 1819. pp. 108–109.

[4] Taking 12 towns from various counties in Connecticut, we find the following numbers of houses collected in villages: Litchfield, 84; Harwinton, 15–20; Plymouth, 20; Hampton, 20; Farmington, 100; Newtown, 50–60; Milford, 100; Brooklyn, 20; Sterling, 30; Voluntown, 15; Tolland, 30; East Windsor, 40. Of these towns Litchfield and Farmington were exceptionally large both in area and population, and Milford was situated on the coast, affording its inhabitants opportunity for maritime occupations.

[5] Travels, II. 317. For a more general description of the New England villages see Lambert, John. Travels in Lower Canada and North America. London. 1810. 2 vols. II. 307–308, and Duncan, John M. Travels through the United States and Canada. 2 vols. New York. 1823. I. 94–95.

Ministers, Lawyers and Physicians.

There were, however, of necessity, some persons in the town who had other interests besides agriculture, and these generally lived in the village. In the first place, there were always a few representatives of what we now call the professional class. At least one clergyman, one lawyer and one physician were evidently indispensable to each community. Of these, the minister seems to have been the one whose "calling" was most sharply distinguished from agriculture. President Dwight takes especial pains to deny the generally accepted report that the country ministers worked on their farms, except in the newest settlements.[3] The ministers lived on farms, however, and drew from them a considerable addition to their meager salaries.[4] The accounts of the settlement of new towns tell of the reservation of a certain share of the land for the minister, in clearing which he was assisted by his parishioners.[5] There was a tendency as land grew more valuable and as the ability of the parishioners to pay a salary, either in currency or in kind, also increased, for the parishes to dispose of their land holdings. But in 1810 much remained,[1] and even now in rural towns the parsonages are often situated on small farms. Although the clergymen were not farmers in the same sense or on the same scale as their parishioners, yet cultivating a kitchen garden and keeping a cow or two and some small stock were occupations which furnished some part of their living and, moreover, were not inconsistent with clerical dignity.

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[1] For a description of the method of apportioning land in early New England towns, see Weeden, William B. Economic and Social History of New England, 1620–1789. 2 vols. Boston. 1890. I. 53–62 and II. 512–515. Also Maclear, Anne B. Early New England Towns. New York. 1908. pp. 81–101, and Andrews, Charles M. The River Towns of Connecticut. In Johns Hopkins University Studies in History and Political Science. 7th series, VII–VIII–IX. pp. 32–79.

[2] See Porter, Noah. Historical Discourse Delivered before the Citizens of Farmington (Conn.). Hartford. 1841. Appendix. Note S. p. 83.

[3] Travels, IV. 436. On the other hand, we have occasional references to the activity of ministers as farmers, as in Warville, Brissot de. New Travels in the United States of America. London. 1792. p. 453.

[4] According to MacMaster, History of the People of the United States, 6 vols., New York. 1885–1913, II. 568, the salaries of country ministers at this time varied from £75 to £140. The New England pound being equal to $3.33, this would make them worth from $250 to $550. At a somewhat later date the salaries of ministers in Middlesex County, Conn., varied from $230 to $1000. In addition to the salary a settlement of from £100 to £200, payable either in currency or in kind, was made on the installation of a new pastor. Field, Statistical Account. p. 145.

[5] See Belknap, Jeremy. History of New Hampshire. 3 vols. Boston. 1792. III. 324.

Lawyers and physicians appear regularly in every account of village life of this period. Scarcely any town managed to get along without at least one lawyer and a couple of "doctors."[2] Travelers remarked on the importance of the legal profession in southern New England, especially in Connecticut, and attributed the fact to the litigious spirit of the people.[3] It may be, however, that other more rational causes can be found. As a matter of fact, this profession offered practically the only opportunity for an ambitious young man to bring himself into prominence in the world which lay outside his own community. As a country doctor or minister he might live and die unheard of beyond the circle of a few towns, but with only the smattering of a legal education he might become a justice of the peace, a selectman, and finally be sent to the state legislature. From that vantage-ground his talents, whatever they might be, would have at least a chance to display themselves. An examination of the careers of the men who were most prominent in the politics of southern New England at the beginning of the century shows in fact that a large proportion of them had been country

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[1] See Field. Statistical Account, 145–148.

[2] A compilation of the statistics given in Pease and Niles' Gazetteer gives the following result for two typical counties in Connecticut:

	No. of Towns	*Lawyers*	*Physicians*
Windham	13	24	44
Tolland	11	14	27

In four towns in Windham County the lawyers were lacking but in the town of Windham, where the county court was held, there were eight. In this county there were five towns which had each four or more physicians.

[3] See Harriott, Lieut. John. Struggles Through Life. London. 1807. II. 55. Wansey, the English clothier, tells us that the best houses in Connecticut were inhabited by lawyers. Journal of an Excursion to the United States of America. Salisbury (England). 1796. p. 70.

lawyers.[1] While waiting for political preferment, or in the intervals between terms of office, the country lawyer would have had a hard time to make a living if he had relied on his legal work alone. Consequently, he sometimes took up a trade such as that of carpenter or shoemaker,[2] but most often made up the deficiencies in his income by farming.[3]

This partial reliance upon agriculture was equally true of the medical profession. They were, in many cases, men with a smattering of knowledge concerning the effect of certain drugs and herbs on the most common diseases,—primarily farmers, who, as Miss Larned says of the doctors in Canterbury, practiced medicine when they had nothing more important to do.[4] The inventory of the estate of a physician of that region shows to what extent he had combined the two occupations. Besides a stock of drugs, medicines and vials, he had one pair of oxen, 13 cows, 15 head of young cattle, 20 sheep, a number of swine, farming tools, hay, etc. It was probably the fact that much of the medical service of the time was being done by poorly educated men who were farmers as well, which caused so much complaint to be made of the inefficiency of the profession at that time.[5]

The Business Men.

Besides these professional men, there were in the rural villages a small group of men who represented in a way the prototype of what we now call the class of business men. There was the taverner or innkeeper, the country trader, the proprietors of the saw-mills, the grist-mills, the fulling-mills, the tanneries; the village artisans or mechanics, the blacksmiths, the carpenters and joiners, and the cobblers. In a mere numerical consideration these occupations might seem to have formed an important element in the economic life of the community, but, on closer observation, it becomes evident that these, too, were usually only auxillary occupations, by-industries of agriculture.

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[1] Taking a list of 64 prominent men at this time, including governors, United States Senators and state officials and legislators, whose previous occupation can be ascertained, we find that 36 of these had been lawyers, 13 were merchants, 10 had come into prominence during the Revolution, 3 were physicians, and 2 were craftsmen. Examples of men of prominence who were originally lawyers in country towns are furnished by Uriah Tracy, United States Senator from Connecticut, Jonathan Trumbull, the elder, Governor of Connecticut, and Caleb Strong, Governor of Massachusetts.

[2] See Neilsen, Peter. Recollections of a Six Years Residence in the United States of America. Glasgow. 1830. p. 182.

[3] Advertisements in the country newspapers such as that in the Massachusetts Spy, published in the town of Worcester, issue of July 1, 1807, are good evidence on this point. This advertisement recommends a farm of 23 acres which is offered for sale as a suitable purchase for a lawyer.

[4] Larned, Ellen Douglas. History of Windham County, Conn., 2 vols. Worcester (Mass.). 1874–1880. II. 423.

[5] See La Rochefoucauld-Liancourt, Travels, I. 448, and Neilson, Recollections, pp. 188–189.

The New England tavern served a wide variety of purposes and its proprietor must needs be a man of varied talents. If situated on a stage-coach route it provided the clean beds and the wholesome fare which were so much appreciated by travelers.[1] Far more important were its services to the townsfolk as a common gathering-place. As a social center it rivaled the meeting-house to whose moral atmosphere it presented a decided contrast. Here much of the political business of the town was transacted; the selectmen's meetings and the sessions of the town court were held regularly in its main room; and at times, in winter, when the meeting-house was too cold, the town meetings held an adjourned session there. It was the scene of many village festivities; the singing school and the dancing school, where the liberal tone of the community permitted such frivolity, met there; on muster days the tavern was the headquarters of the train band. On most of these occasions the tavern bar, where strong liquors were dispensed, was liberally patronized. This feature, too, proved a strong attraction for the village topers and ne'er-do-wells.[2] It was this multiplicity of services to the community rather than the patronage of the infrequent travelers which explains the uniform occurrence of taverns in inland towns. They were, of course, most numerous on the post-roads between New York and Boston, but even in the smallest and most isolated towns at least one tavern could usually be found.[3]

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[1] Brissot de Warville discusses appreciatively an inn in Spencer, Mass. Travels, I. 124.

[2] See Field, Edward. The Colonial Tavern. Providence. 1897. Also MacMaster, History of the United States. II. 564–565. Adams, C. F. Episodes, II. 783.

[3] Chastellux, Travels, I. 50, while traveling in Connecticut, writes of a law which requires public houses at intervals of every six miles on the great roads. Such a law, however, does not appear in the statutes in force in the three states of southern New England at the end of the eighteenth century. In Massachusetts and Connecticut, the local authorities were invested with power to determine the number of taverns deemed necessary in each town, and to appoint fit persons as keepers. The latter were required to give bonds and pay a license fee. Connecticut Pub-

The tavern-keeper was a versatile individual. "He led the singing in the meeting house on Sunday; ran the ferry if his tavern was situated near a stream; acted as schoolmaster for the children of those who frequented his house; served his fellow men in the legislature, town council, selectmen, and other minor offices; ruled with solemn dignity over the local courts; headed the Train Band on training or squadron days; kept order in the meeting house on Sundays; surveyed the lands assigned to the land-crazy townsmen; . . . and in fact, next to the town clerk, was the most important and learned man in the place."[1] Besides these possible lines of activity, he was often a physician, and usually owned and managed a farm from the produce of which he supplied a part at least of the wants of his patrons.[2]

The Country Store.

The country store was as regularly found in New England towns as the tavern; in some cases the two institutions were combined in the same building, under the same proprietorship. In the typical inland town there were generally not more than two stores and, in many cases, only one.[3] The stock in trade was regularly described in their advertisements as European and West India goods.

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lic Statute Laws. I. 640–645. 1808, and Massachusetts Perpetual Laws. pp. 55–63. 1788. License fees were also demanded in Rhode Island, although the regulations were in general less strict in this state. Rhode Island Public Laws. Revision of 1798, pp. 393–394, 580.

[1] See Field, Edward. The Colonial Tavern. pp. 41–42.

[2] Advertisements of farms for sale in the country newspapers clearly demonstrate this fact. See Massachusetts Spy, Jan. 28, June 22, 1807, and National Aegis (Worcester, Mass.), April 25, 1804. Another fact which shows the close relation between this business and the usual occupations of the agricultural population, was the practice of "laying oneself out to give entertainment." In outlying districts where the taverns were either bad or inconveniently situated, or perhaps entirely lacking, a traveler often applied for food and lodging to any "householder of substance," who was not unwilling to accept a moderate sum in return. President Dwight was often accommodated in this way, especially in the northern states of New England. See also Kendall, Edward Augustus. Travels through the Northern Parts of the United States. New York. 1809. 3 vols. II. 147; and Kittredge. George Lyman. The Old Farmer and his Almanack. Boston. 1904. pp. 282–283.

[3] The descriptions of the various towns given by Whitney in his History of Worcester County, Mass., show that the usual number of stores was two in each town. The advertisements in the newspapers published in inland towns such as Leominster, Stockbridge, and Brookfield, Massachusetts, rarely contain notice of more than one country store.

Under the first of these euphonious phrases were included a few pieces of imported dress-goods, crockery, glassware, powder and shot, and bars of iron and steel. The West India goods were salt, molasses, rum and other liquors, indigo, spices and sugar.[1] In regions of active internal trade, where the farm produce could find outlet to a market, as for instance in the towns along the Connecticut River,[2] or in the southern part of Windham County, Conn.,[3] the country traders were numerous and did a brisk business. They bought up dairy products and salted pork and beef as well as household manufactures from the farmers and undertook, on their own responsibility, often, the sale of these products in the Southern states or in the West Indies. In the isolated rural community, however, business must have been extremely dull. Some profit could be made from the exchange of goods among the members of the community; but of goods from the outside the latter were able to purchase very little. Some salt and a few other necessary articles they had to have; the liquors they often bought in preference to the things which they really needed and were often largely in debt to the storekeeper on this account.[4] In order to eke out a living the storekeeper resorted to agriculture, either tilling the land himself or hiring occasional assistance from his neighbors.[5]

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[1] An unusually detailed advertisement is that of a Worcester, Mass., merchant who has to sell: West India goods and groceries, viz: Best cognac and Spanish brandy; West India and New England rums; real Holland gin; Madeira wines; flour, molasses; loaf, white and brown sugar; teas, coffee, chocolate, spices, raisins, copperas; alum; rock and fine salt; dried and pickled fish; glazed china tea sets, crockery and glass ware, violins and flutes. He offers to give cash for country produce. National Aegis, November 20, 1804.

[2] A very great difference is observable between the character of the advertisements in newspapers published in the river towns such as Middletown, Hartford, Springfield, Northampton, and Greenfield and those published in the towns mentioned in Note 3, p. 258.

[3] See Windham Herald, 1808. Larned, History of Windham County, II. 426.

[4] Mr. Adams seems to be justified in his opinion that the sale of liquors was a large part of the business of the country store. He says: "In every store in which West India goods were sold, and there were no others, behind the counter stood the casks of Jamaica and New England rum, of gin and brandy. Their contents were sold by the gallon, the bottle or the glass. They were carried away or drunk on the spot." Episodes. II. 790.

[5] As witness the advertisements in country newspapers. Such an advertisement is that found in the National Aegis of a farm of 90 acres in the town of Paxon, Worcester County, Mass., on which is a combined store and tavern. April 25, 1804.

Village Industries.

Every town had its complement of grist-mills, saw-mills and fulling-mills; usually there were three or four of the grist and saw-mills and one or two fulling-mills.[1] The grist-mills ground the farmer's corn and rye; the saw-mill prepared the lumber for building purposes; the fulling-mill, or clothier's works, as it was sometimes called, contained simple machinery for shrinking and dressing the cloth which had been spun and woven in the farm-houses.[2] Combined with the fulling-mill was often a carding machine which performed by water power the laborious operations of preparing the wool for spinning. These machines had only recently been introduced,[3] but had spread so rapidly that by 1810 they were found in almost every town. The business carried on by these mills was often interrupted in summer by the failure of the streams on which they depended for their water power; at other times it was small in amount, being limited almost without exception to the needs of the community.[4] The number of mills in a community is by no means an indication of an equal number of proprietors receiving their entire income from this sort of industrial activity. Often various sorts of mills were carried on under one ownership, and besides the proprietors of these various enterprises were regularly farmers as well.[5]

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[1] Exceptionally large towns such as Litchfield, in Connecticut, had a much larger number of these mills.

[2] The business of a fulling-mill in Cheshire County, N. H., is described in detail in Gallatin's Report on Manufactures, American State Papers, Finance, II. 435. Its labor force consisted of two men and four apprentices, working four months in the year. The total amount of cloth dressed was 6,700 yards per annum. Such mills were often erroneously designated as woolen factories in early descriptions of manufactures.

[3] About 1800.

[4] An exception is found in the case of towns within reach of a market, as for example the coast towns of Fairfield County, Conn., in which considerable milling of flour was done.

[5] An instance is given by Miss Larned in her History of Windham County. In Pomfret, Conn., in 1787, one Captain Cargill owned and operated three sets of grist-mills, a bolting-mill, a blacksmith's shop, a fulling mill, and a churning mill, all on the same water power and under the same roof. Vol. II. p. 266. See also Ibid. II. 240.

An illustration of the combination of several of these enterprises with farming is given in the Hampshire Gazette (Northampton, Mass.), Feb. 20, 1811. A farm of 130 acres is advertised in the town of Savoy, having on the premises a store, potash works, grist-mill, and saw-mill. As if these were not enough to keep the future owner busy, the seller adds that the place is a good site for a tavern.

A tannery or two seem to have been uniformly a part of the economic outfit of the inland town.[1] The working dress of the people was largely composed of leathern garments, not only their shoes and leggings, but shirts, breeches and coats as well. A large part of the material came from the hides of animals slaughtered on the farms and prepared at the village tannery. This was a primitive affair, quite on a par with the mills in the size of its plant and in the scope of its operations.[2] Cider mills and cider and grain distilleries were numerous, but were for the most part owned by farmers and located on their premises.[3]

The manufacture of potash and pearl ash was a by-industry of the farmers in many towns, especially in newly settled regions in Vermont and New Hampshire, and in Worcester and Berkshire counties in Massachusetts. La Rochefoucauld described the process of preparing potash "which is generally observed in the United States," as follows: "Large tubs, with a double bottom, are filled with ashes; the uppermost bottom which contains several holes, is covered with ashes, about ten or eleven inches deep, while the under part of the tub is filled with straw or hay. Water, being poured over the ashes, extracts the particles of salt, and discharges all the heterogeneous matter which it may contain in the layer of hay or straw. The lie is drawn off by means of a cock, and if it should not yet have attained a sufficient degree of strength, poured again over the ashes. The lie is deemed sufficiently strong when an egg swims on it. This lie is afterward boiled in large iron cauldrons, which are constantly filled out of other cauldrons, in which lie is likewise boiling . . . . This salt is of a black colour, and called *black potash*. Some manufacturers leave the potash in this state in the cauldron, and encrease the fire, by means of which the oil is disengaged from the salt in a thick smoke, and the black potash assumes a grey colour, in which state it is packed up in barrels for sale.

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[1] In the state of Connecticut, for instance, according to the Digest of Manufactures prepared by Tench Coxe from the facts collected in the Census of 1810, there were 408 tanneries. An examination of Pease and Niles' Gazetteer shows that these establishments were scattered fairly evenly among the 119 towns.

[2] An early tannery in the town of Quincy, Mass., is described by Mr. Adams as follows: "The earlier tanneries were strange primitive establishments. The vats were oblong boxes sunk in the ground close to the edge of the town brook at the point where it crossed the main street. They were without either covers or outlets. The beam-house was an open shed, within which old, worn-out, horses circulated round while the bark was crushed at the rate of half a cord or so a day by alternate wooden and stone wheels, moving in a circular trough fifteen feet in diameter." Episodes, II. 929.

[3] Coxe, Tench. A View of the United States of America. London. 1794. p. 269. The manufacture of cider brandy was an important by-industry of the farmers of Woodbury, Conn. Pease and Niles, Gazetteer, p. 267.

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Pearlash is potash purified by calcination. To this end the potash is put into a kiln, constructed in oval form, of Plaster of Paris; the inside of which being made otherwise perfectly close, is horizontally intersected by an iron grate, on which the potash is placed. Under this grate a fire is made, and the heat, reverberated from the arched upper part of the kiln, compleats the calcination, and converts the potash into pearlash; . . . . The process of calcination lasts about an hour."[1]

The apparatus necessary for this manufacture was inexpensive, the largest outlay being for the purchase of the kettles in which the lye was boiled. The products, pearlash and potash, were used to some extent in the household in making soap, in scouring wool, and in bleaching and dyeing cloth. The larger part of the output was sold, partly for use in glass-making and other manufactures, and partly for export.

The Mechanics and Artisans.

We have next to consider the country mechanics or artisans. Here we find that although the division of labor seems to have progressed to a considerable degree in the separation of crafts, yet the connection of each with the fundamental industry, that of tilling the soil, was as close and as rarely completely dissolved as in the case of the professional or business men already described. This imperfect specialization of occupations is described by Tench Coxe as follows: "Those of the tradesmen and manufacturers, who live in the country, generally reside on small lots and farms, from one acre to twenty; and not a few upon farms from twenty to one hundred and fifty acres; which they cultivate at leisure times, with their own hands, their wives, children, servants, and apprentices, and sometimes by hired labourers, or by letting out fields, for a part of the produce, to some neighbour, who has time or farm hands not fully employed. *This union of manufactures and farming*[2] is found to be very convenient on the grain farms; but it is still more convenient on the grazing and grass farms, where parts of almost every day, and a great part of the year, can be spared from the business of the farm, and employed in some mechanical, handycraft, or manufacturing business. These persons often make domestic and farming carriages, implements, and utensils, build houses, tan leather, and manufacture hats, shoes, hosiery, cabinet-work, and other articles of clothing and furniture, to the great convenience and advantage of the neighbourhood. In like manner some of the farmers, at leisure times and proper seasons, manufacture nails, pot-ash, pearl-ash, staves and heading, hoops and handspikes, axe-handles, maple-sugar, &c."[1]

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[1] Rochefoucauld-Liancourt, Travels, I. 384–386. See also Bishop, J. Leander. History of American Manufactures. 2 vols. Philadelphia. 1861. II. 57.

[2] Author's italics.

Further testimony on this point is given by Brissot de Warville,[2] who says of the region of Worcester County, Mass.: "Almost all these houses are inhabited by men who are both cultivators and artizans; one is a tanner, another a shoemaker, another sells goods; but all are farmers." If we seek for confirmatory evidence from the size of farms or the amount of land held by these artisans, a serious difficulty arises. They naturally tended to congregate in the small village settlements, where customers would have ready access to them. The gazetteers often speak of the "mechanics' shops" in their descriptions of these villages.[3] These shops were located in or near the dwellings on the "home lots." Consequently, when we find advertisements of such shops for sale with amounts of land varying from one to ten acres,[4] we are not justified in concluding that these men could not be farmers; for, as we have seen, large outlying fields were as a rule held by all village dwellers, and the home lots held by the artizans correspond in extent with those held by men who were purely and simply farmers.

When we consider the numbers of the craftsmen in the various trades both separately and as a body, in proportion to the population of towns in which they worked, our conclusion of their partial dependence on agriculture is still further strengthened. Fortunately we have complete lists of the artisans in two typical rural towns in Litchfield County, Conn., one (Cornwall) of 1600 population and the other (Washington) having 1575. They are as follows:

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[1] In his View of the United States, pp. 442–443.

[2] Travels, I. 127.

[3] Pease and Niles, Gazetteer, pp. 183–184. Art. New Fairfield, Conn.

[4] Such advertisements are to be found in the Massachusetts Spy, Feb. 28, Oct. 14, and 19, 1807; National Aegis, Oct. 26, 1807. Also in the Windham Herald and other newspapers published in small inland towns. Occasionally instances of farms of 50–70 acres with shops are found.

	CORNWALL	WASHINGTON
Shoemakers	20	11
Carpenters	4	8
Blacksmiths	7	8
Tailors	5	4
Coopers	6	7
Carriage and wagon makers	3	4
Cabinet and chair makers	2	2
Saddlers	0	1
Total	47	45[1]

It would be impossible, on account of changed habits of consumption and on account of the great quantities of articles manufactured for a wide market which are bought and sold in a modern city, to make any valuable comparison between the present ratio of craftsmen to the total population with that found in 1810. Such a comparison, however, may be made between conditions existing in these rural communities and in Hartford, Conn., in 1819, as described by Pease and Niles. In a population of 6,901 (1820), this city had the following craftsmen:

Housejoiners and carpenters	19
Shoemakers	15
Blacksmiths	13
Coopers	10
Cabinet and chair makers	8

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[1] The statistics for Cornwall are taken from Pease and Niles, Gazetteer, pp 244–245, and those for Washington from Morris, James A. Statistical Account of Several Towns in the County of Litchfield. Published by the Connecticut Academy of the Arts and Sciences. Vol. I. New Haven. 1811.

An interesting table of the same sort appears in the description of Middlebury, Vt., in the Massachusetts Historical Society's collections, Series II. Vol. 9. p. 131. It had in 1820 in a population of about 2300 (Census figures for 1820 do not give population by towns in Vermont) the following artisans: Hatters, 3; shoemakers, 8; tailors, 3; milliners, 4; saddlers, 3; goldsmiths, 2; blacksmiths, 9; gunsmiths, 1; glaziers, 1; wheelwrights, 5; painters, 1; coopers, 2; tinners, 2; potters, 4; tanners, 3; bakers, 2; cabinetmakers, 3; housejoiners, 14; masons, 6; and in addition 4 saw-mills, 1 oil mill, 1 paper mill and 2 potash works.

Tench Coxe, in his View of the United States, pp. 312–313, gives a list of the artisans in Lancaster, Penn., the largest inland town in the United States in 1790 (population ca. 3500). It had 234 craftsmen of the most diverse sorts. Lists are also given for four other inland towns, Washington, Pittsburgh, Bedford and Huntington. Ibid. p. 311.

Tailors	11
Carriage makers and wheelwrights	6
Master masons	6
Butchers	16
Painters	6
Leather workers	2
Hatters	2[1]

If we may assume that in Hartford these were specialized artisans, devoting their whole time to the practice of their trades and producing only for the local market,[2] then we may from these figures establish normal ratios of the various types of craftsmen to the total population. The comparison of these ratios with those shown by the statistics of Cornwall and Washington is striking. In only one case, that of the carpenters, is there evidence of greater specialization on the part of the rural craftsmen. In general we find them serving a much narrower market than their colleagues in the city. Compare the position of the shoemakers in the country and in the city. We find them making shoes for from three to nine times as many people in the city as in the country; the tailor and the blacksmith in the city both have about twice as many customers as their colleagues in the country towns. To my mind, these figures are the strongest sort of corroborative evidence in support of such a general statement as that of Tench Coxe.[3] It seems clear that the 40 to 50 artisans found in a rural town were not representatives of a specialized class in industry, but rather were farmers who had acquired

	CORNWALL	WASHINGTON	HARTFORD
Shoemakers	1 to 80	1 to 143	1 to 258
Carpenters	1 to 400	1 to 197	1 to 460
Tailors	1 to 220	1 to 395	1 to 630
Blacksmiths	1 to 229	1 to 197	1 to 530
Coopers	1 to 267	1 to 225	1 to 690
Carriage makers	1 to 534	1 to 394	1 to 1150
Cabinet makers	1 to 800	1 to 788	1 to 850
Leather workers		1 to 1575	1 to 3450

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[1] Pease and Niles, Gazetteer, p. 43.

[2] Although there is no direct evidence on these points, yet the general descriptions given in the gazetteers of this city and of towns of this size seem to justify the assumption. Certainly there is no evidence showing that craftsmen in such a city sold any of their products to a wide market.

[3] Quoted on pages 262-263.

skill in some particular trade, putting it to advantage in the dull seasons of their principal occupation, by doing odd jobs for their neighbors. Certainly making the shoes needed by sixteen or even thirty families, or building and repairing houses for forty or eighty families would have been insufficient occupation for the head of a family. Only by this combination of occupations, "this union of manufactures and farming," as Tench Coxe called it, could they have existed.[1]

The Lack of Division of Labor—Causes and Results.

This completes the survey of the various occupations of the inhabitants and the analysis of the extent of the division of labor in the inland town. We may summarize the results as follows: In the first place, an examination of the method of settlement in the villages, those diminutive points of concentration of the rural population, showed that their inhabitants were farmers—producers and not merely consumers of food stuffs. Then, taking up successively the representatives of what we now call the professional class, the business men and the artisans, or country mechanics, we reached the same conclusion in regard to each, viz.; that with the usual exception of the minister, all of these 50 to 60 men[2] held farms which provided their food as well as other necessities of life.[3] We may think, then, of this whole group of persons as standing on the borderline between agriculture and a specialized non-agricultural occupation. They were at times doctors, lawyers, innkeepers or storekeepers, fullers, carpenters, or tanners, but most of the time plain farmers.

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[1] This class of country mechanics offers many interesting points of comparison with and contrast to the "Lohnwerker" described by Bücher in his "Entstehung der Volkswirtschaft." 9 Aufl. pp. 170–171. The "Störer" or itinerant workers which he describes there had their counterpart in the traveling weavers, tailors, and cobblers who worked up the raw material of the farmers into finished goods on the spot. See Earle, Alice Morse. Home Life in Colonial Days. New York. 1898. pp. 212–213; and Larned, History of Windham County, II. 395.

The blacksmith, the most indispensable of all the rural artisans, was perhaps also the most regularly employed of all. Yet very often, up to within recent years, he also has been a farmer. The variety of products turned out in a smith's shop may be learned from the account books of Hezekiah Bunnell which are preserved in the library of the New Haven Historical Society. They cover the years 1725–1764, during which he carried on his business in West Haven, Cheshire and Farmington, Conn. They also illustrate the fact that the payment for the services of the artisans was often in kind.

[2] In a typical town, say of 1500 to 2000 persons.

[3] For a description of various industries carried on in farm houses see infra, Chapter VI.

Thus we can see that the distinction between various occupations which we had set up for purposes of analysis tends to vanish. The broad outlines of a future division of employments were marked out, but the process of separation was as yet hardly begun.

The disadvantages of this lack of specialization, this combination of several professions, occupations or trades in each individual, are obvious and must have been recognized even then. The doctor and the lawyer, the cobbler and the carpenter, as well as the community which they served, must have known that each one of them could have been far more efficient if only he could have devoted his entire attention to one occupation. They knew "practice makes perfect," and how could the practice of any trade or profession bebecome perfect when it must continually be interrupted in order to procure from the soil a partial subsistence? If they recognized the defects in their economic organization, why did they not remedy them? If they realized the advantages which might be expected from greater specialization, why did they not introduce it? The solution of this problem is found in the limited extent of the demand for the services of the non-agricultural class. The towns were small and the purchasing power of the farmers, for reasons which will appear in later chapters, was set within very narrow limits. Hence such a community could not furnish sufficient demand for the products and services of specialized non-agricultural workers to provide the latter with a living. Their only resource to supply the deficiency in income was the soil. Hence the union of all trades, businesses and professions with agriculture.[1]

Our interest in this essay is primarily in the agricultural population; hence it is pertinent to inquire how the farmers were affected by this combination of employments which we have observed in the rural town. Did it make any difference to the plain farmer, the man who was getting his living merely from cultivating the soil, whether his neighbors, the miller and the carpenter, were farmers as well as craftsmen? Obviously, the practice of agriculture by all the members of the community meant that none of them could have an opportunity to sell anything regularly to his neighbors. That is, under such conditions as we have described, there was no market for agricultural produce in the inland town. What this state of affairs meant to the farmers and how far it determined the character of the agricultural industry, and of home and community life, are subjects which are best considered in later chapters.

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[1] No better illustration than this could be desired of the famous dictum of Adam Smith that "the division of labour is limited by the extent of the market." He says: "As it is the power of exchanging that gives occasion to the division of labour, so the extent of this division must always be limited by the extent of that power, or, in other words, by the extent of the market. When the market is very small, no person can have any encouragement to dedicate himself entirely to one employment, for want of the power to exchange all that surplus part of the produce of his own labour, which is over and above his consumption, for such parts of the produce of other men's labour as he has occasion for." Wealth of Nations. Book I. Chap. III. p. 15. (Everyman's edition).

Manufactures in Inland Towns.

The question naturally arises at this point, How far were such communities as these described typical of all the towns in southern New England? Were there not, perhaps, some towns in which manufacturing or commercial enterprises had concentrated an industrial or a maritime population? And, if so, to what extent did these furnish a demand for the farmers' produce?

A casual survey of the list of articles manufactured in the Northern and Eastern states as reported in the official statements of Hamilton (1791),[1] Gallatin (1810),[2] and Coxe (1814)[3] would lead one to expect that somewhere in these states a considerable concentration of industrial workers might be found. Among the articles there enumerated were soap and candles, tallow and spermaceti; leather goods, linen, cotton and woolen cloth, cabinet ware and furniture, hats, paper, spirituous and malted liquors, cordage, manufactures of iron, gunpowder, glass and earthenware. But when we come to analyze the methods by which these articles were produced it becomes evident that only a few of them were, in any significant sense of the word, manufactures. The great majority of the articles included under this term were produced either in the household, as for instance a large part of the soap and candles, woolen and linen cloth, or in craftsmen's shops, as were the furniture and the leather goods. Such goods were either consumed in the family which produced them or disposed of within the community. Of these articles there was practically nothing produced for a wide market, and consequently there was no cause for the growth of an industrial population. In the case of such articles as cordage, liquors, gunpowder and glass there was real manufacturing. But this was carried on for the most part in a few coast towns, such as Boston, Norwich, Providence and

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[1] American State Papers, Finance, I. 123.

[2] Ibid. II. 425–439.

[3] Ibid. II. 666–677.

New Haven, and the effect which these enterprises may have had in creating a market for farm produce is best considered in connection with the commercial activities of these towns.

In many inland towns, it is true, there were enterprises already established producing small articles of various sorts which were disposed of in a market much wider than that of the local community. Such were the buttons, tinware,[1] clocks, combs, and other "Yankee notions" which formed the stock in trade of the peddlers in their annual trips to the Southern states. Yet the production of these articles was conducted on such a minute scale, at this early date, that no noticeable concentration of an industrial population resulted. Towns like Waterbury, or Plymouth, or Berlin, in Connecticut, or Leominster in Massachusetts,[2] were not noticeably different, in the opening years of the century, from the hundreds of other inland towns which had no manufacturing enterprises. Their population was not larger than that of many prosperous agricultural towns[3] and the presence in them of ten or a dozen industrial workers would not have meant much to the farmers. Besides the articles enumerated above, some towns made paper, some linseed oil,[4] others earthenware and pottery[5] in establishments or mills of much the same sort as the grist-mills and saw-mills which were regular features of the village economy.

Hats.

There were only a few branches of manufacture, some carried on in inland and others in coast towns, which had become sufficiently important to deserve especial consideration. The manufacture of fur and woolen hats, which in many inland towns was carried on in small shops for a purely local market, had in Fairfield County, Connecticut, been developed into an export industry. In 1810 the census credited this county with a product of 350,000 hats. Most of these were made in the town of Danbury, where there were 56 hat shops employing from three to five men each.[1] As a result of the growth of this industry the population of the town had increased from 3,180 to 3,600 in the decade 1800–1810. Hats were also manufactured in smaller quantities in New London.[2]

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[1] For a description of the tinware industry in Berlin and of the methods of marketing this and other small manufactures see Dwight, Travels, II. 43–45. Also Kendall, Travels, I. 128–129. A consideration of the early development of many small manufactures in Connecticut towns, including tinware, clocks and buttons, will be found in Lathrop, William G. The Brass Industry in Connecticut. New Haven. 1909.

[2] In Leominster 6500 dozen combs were produced annually by a labor force varying from ten to twenty men. See Whitney, History of the County of Worcester, p. 198.

[3] In 1810 the populations of Waterbury and Berlin were 2900 each; Plymouth, where clocks were made in a few small shops, had 1900 people and Leominster 1600.

[4] According to the statistics collected for the census of 1810 there were 19 paper mills and 24 oil mills in Connecticut, 22 oil mills and 33 paper mills in Massachusetts, and 3 of each sort in Rhode Island.

[5] See Larned, History of Windham, II. 365. These goods were also marketed by peddlers.

The Iron Industry.

Iron furnaces, forges and trip-hammers, as well as rolling and slitting mills, were in operation all through the inland region of southern New England in 1810. For the furnaces the three requisites to profitable operation were a supply of iron ore, a plentiful supply of wood to produce the char coal used as fuel, and a stream of water to furnish power for the bellows. These requisites seem to have been met best in two localities; in Litchfield County, Conn., and in a small area in south-eastern Massachusetts, including towns in Plymouth and Bristol Counties. In Litchfield there were in 1810 four furnaces, 32 forges, 8 trip-hammers, and 2 rolling and slitting mills. These works were rather evenly distributed among 16 towns, those most interested being Salisbury, Canaan and Kent.[3] In the first of these there was a famous mine from which 4,000 to 5,000 tons of ore of excellent quality were annually taken. Iron was also mined in Kent and limestone was procured in Canaan.

The principal articles produced from iron in this county were anchors and other forms of ship-hardware, bells, cart and wagon-tires, sleigh-shoes, scythes, gun-barrels, bar and sheet-iron, and nail-rods. Up to 1810 this industry seems to have had little if any appreciable effect in creating a non-agricultural population in the county.

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[1] Bailey, James M. History of Danbury, Conn. New York. 1896. p. 217.

[2] Coxe, Tench. View of the United States, pp. 158–159. In this place there were 17 hatters' shops, producing 10,000 hats annually.

[3] Pease and Niles' Gazetteer gives us facts concerning the extent of the iron manufacture in these towns at a somewhat later date, 1819. There were then in Canaan 8 forges, 7 anchor shops and 2 furnaces; in Kent there were several mines in operation and 7 forges, with an estimated total output of 100 tons annually. Salisbury had 3 forges, 2 blast furnaces, 1 shop making anchors and screws, another making scythes, and 2 shops fitted with trip-hammers operated by water power which produced gun-barrels, sleigh-shoes and hoes.

The largest towns, Litchfield and New Milford, had populations of 4,600 and 3,500 respectively, but in neither of them was there any industrial development beyond the artisan activities which were regularly found in agricultural communities. Their growth was based upon exceptionally large area[1] and upon exceptional opportunities enjoyed by their inhabitants in getting produce to market. On the other hand, the towns in which the iron manufacture was most important were considerably smaller, Salisbury having 2,700 people, Canaan 2,200 and Kent 1,800.

The iron industries in south-eastern Massachusetts depended on the bog ore which was dug or dredged from the bottom of their shallow ponds.[2] Another valuable asset were the tracts of small pines and oaks, which furnished a plentiful supply of charcoal for fuel. At the beginning of the century there were 14 blast furnaces, 6 air furnaces, 20 forges and 7 rolling and slitting-mills in this region. The furnaces turned out on an average 75 to 90 tons of cast-iron each year, the forges had a capacity of about 50 tons of bar-iron and the rolling and slitting-mills produced about 200 tons each annually.[3] The furnaces gave employment to about eight or nine men each, when they were in operation. Besides nails and nail-rods, which seem to have been the staple product, these works manufactured agricultural implements, such as spades, shovels and scythes, wire teeth for wool and cotton cards, saws and edge tools, buttons, cannon-balls and firearms, anchors, bells, sheet-iron and iron utensils.

The towns of Taunton, Plymouth, Middleborough, and Bridgewater[4] were those most engaged in this industry, although a half-dozen or more neighboring towns had a furnace or a forge or two apiece. The total annual output from the works in Taunton was estimated in 1810 at 800 tons, including 350 tons of nails and 200 dozen spades and shovels.[5] In Plymouth there were rolling and slitting-mills whose principal produce was nail-rods, of which they turned out about 100 tons per year.[1] In Bridgewater scythes, axes, edge-tools, muskets and cannon were produced. The manufacture of nails was the particular branch of this industry pursued in Middleborough. The ore was dredged from ponds within the town limits, smelted in local furnaces and rolled and slit into nail-rods. These rods were later turned into nails by the farmers of the town in winter. This union of agriculture and manufactures was commented on by travelers.[2] In fact, it seems to have been prevalent all through this section. The business of the inhabitants of a typical town in Plymouth County was thus described in 1814: "Supplying the furnaces with coal (*i.e.*, charcoal), and Plymouth with fuel, together with the sale of a surplus of rye, and some other productions, are the usual resources of the inhabitants, most of whom are farmers, with some mechanics; and in the summer months furnishing a few fishermen from Plymouth."[3] Here we see that although somewhat of a market was now open to the farmers, due to the extension of the iron industry, yet agriculture and manufacture are not yet separate industries.

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[1] Litchfield contained 72 square miles and New Milford 84.

[2] One of these ponds, in the town of Kingston, was said to have yielded 3000 tons of this ore in the space of a few years. A full description of the various sorts of bog-ore found in this region and of the methods of obtaining it will be found in the Collections of the Massachusetts Historical Society. Series I. Volume 9, pp. 254–256. Ore was also imported in small quantities from New Jersey for these works.

[3] Bishop, History of American Manufactures. I. 492. See also Mass. Hist. Soc. Coll. I. 9: 263.

[4] These were all larger in population than the typical inland town. Bridgewater, the largest town in New England off tide water, had 5150 people. The others ranged from 3900 to 4400.

[5] Morse, Gazetteer, 1810.

Of the iron manufacture in Rhode Island Bishop says: "Manufactures of iron, including bar and sheet-iron, steel, nail-rods, and nails, farming implements, stoves, pots, and other castings and household utensils, iron-works for ship-builders, anchors and bells, formed the largest branch of productive industry in the State toward the close of the eighteenth century."[4] In Providence County where the bulk of the manufacture was carried on, there were in 1810, 20 trip-hammers, 2 furnaces and 1 rolling and slitting-mill. Since many of the towns in which these and other works were located were also engaged in commerce, the effect of this industry in creating a non-agricultural population can best be discussed in a later section.[5]

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[1] Morse, Gazetteer, 1810.

[2] Dwight, Travels, II. 31 says: "In the winter season the inhabitants of Middleborough are principally employed in making nails, of which they send large quantities to market. This business is a profitable addition to their husbandry; and fills up a part of the year, in which, otherwise, many of them would find little employment." See also Mass. Hist. Coll. I. 3:2.

[3] Mass. Hist. Coll., II. 4: 276. Similar conditions are described in Wareham and Kingston. Ibid. II. 4: 286, and II. 3: 205–207.

[4] History of Manufactures, I. 503.

[5] See infra pp. 281-282.

Shoemaking.

Shoemaking was carried on by the village cobblers, either in itinerant fashion, traveling from farm to farm, or as a handicraft in their shops on the village street. Here they produced, either from their own material or from that which was brought to them by customers, goods to supply merely the demand of the local market. A wider market seems first to have been furnished in any proportions by the demand for ready-made shoes for the Continental army during the Revolution. This demand was supplied principally by certain towns in Massachusetts. As early as 1778 men's shoes for the wholesale trade were being made in Reading and in Braintree. In Lynn the transition from the handicraft to the commission stage of the industry had taken place somewhat earlier. In 1795 President Dwight found 200 master workmen employed there with 600 apprentices, carrying on their trade in little shops beside their homes along the village street. Their annual output was estimated at from 300,000 to 400,000 pairs of women's and children's shoes which they sold in Boston, Salem and other seaports.[1] Some were destined for consumption in those cities, but the larger part were shipped thence to the Southern states and the West Indies. In Connecticut shoes were made for export in Guilford, Durham, New Canaan and Woodstock.[2] In none of these towns did the population amount to 3,000 in 1810, except in Lynn and Guilford, and in both of these commercial and fishing operations were partial causes of concentration.

Woolen Cloth.

The manufacture of woolen cloth in small factories had begun as early as 1790 in southern New England, but up to 1810 the industry had had a very slow growth. In addition to the high price of labor, which hampered all attempts at manufacture at this period, there were the added difficulties of inexperience with the new spinning machinery, lately imported from England, and the unsatisfactory character of the supply of the domestic wool both in quantity and quality. The new factories were situated for the most part in small towns;[3] they employed but few hands and turned out an annual output which would now be considered insignificant. The largest of the five woolen mills in New England from which Secretary Gallatin received reports in 1809 employed only 28 persons.[1] The output of the only woolen mill in Massachusetts enumerated in the Census of 1810 was 6,800 yards per annum, while that of two mills in Kent County, Rhode Island, was 11,000 yards for both. Altogether there were, perhaps, 20 or 25 such factories in southern New England in 1810.[2] The mills established by General Humphreys at Derby, Conn., shortly after 1800, described in Dwight's Travels, III. 375–377, are hardly typical. Besides carding and fulling machines of improved pattern they contained two jennies, a billy with 40 spindles, two newly invented shearing machines, four broad looms, eight narrow looms, and eighteen stocking frames. One writer says: "This is a fairly complete picture of the best woolen mill that existed in the United States up to the War of 1812. For its day it was far in advance of the times, and far superior to many which existed a quarter of a century later."[3]

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[1] Dwight, Travels, I. 422.

[2] These facts have been taken from the historical sketch of the boot and shoe industry in the Census of 1900, Part III., Vol. IX., p. 754 and from Hazard, Blanche E., Organization of the Boot and Shoe Industry in Massachusetts Before 1875. Quarterly Journal of Economics, Vol. XXVII., pp. 236–262.

[3] In Massachusetts such factories were established in Ipswich, 1792; in Newbury, 1794; in Monson, 1800; in North Andover, 1802; in Derby, Conn., 1806; and in Peacedale, R. I., in 1804.

Cotton Spinning.

Although the birth of the cotton manufacturing industry in New England, and in the United States as well, is formally dated from the arrival of Samuel Slater in Providence, Rhode Island, and the erection of the first cotton mill there in 1790, yet up to 1807 the growth had been inconsiderable, only 15 factories employing some 6,000 spindles having been put into operation.[4] A great stimulus was given to the new industry in the next few years by the prohibition of the import of foreign-made goods in the Embargo and Non-Intercourse Acts of 1807 and 1809, so that at the end of 1809 Secretary Gallatin had received reports from 62 mills in operation with a total of 31,000 spindles.[5] In the reports collected by the census officials in 1810,

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[1] Gallatin's Report on Manufactures. American State Papers, Finance, Vol. II, p. 434. This mill was situated in Warwick, Rhode Island, and produced 10,000 yards annually.

[2] According to the Digest of Manufactures prepared by Tench Coxe from the Census returns of 1810, there were 15 mills in Connecticut, 2 in Rhode Island, and only 1 in Massachusetts. The returns for the last state were defective, however, and perhaps a half dozen or more mills were in operation there. See Dickinson, R., Geographical and Statistical View of Massachusetts. 1813. p. 66.

[3] North, S. N. D. The New England Wool Manufacture. In the New England States (W. T. Davis, editor). 4 vols. Boston. 1897. Vol. I., p. 205.

[4] Gallatin, Op. cit., p. 427. Twelve of these were in Rhode Island, two in Massachusetts, and one in Connecticut.

[5] Ibid.

Coxe found that there were 96 cotton manufacturing establishments in southern New England; 54 in Massachusetts, 28 in Rhode Island, and 14 in Connecticut.[1] The district of greatest concentration was then an area within a radius of 30 miles from Providence, including towns in all three states. Here there were 26 mills, with about 20,000 spindles.[2] The mills were mostly small, having on an average 600 to 800 spindles. Such a mill would employ about 40 persons, 5 men and 35 women and children.[3] Up to this time spinning was the only operation carried on in these mills, the power looms not being introduced until about 1815.[4] Meanwhile the yarn was given out to the farmers in the vicinity to be woven into cloth in their homes.

Summary

In summarizing these facts we must again emphasize the real meaning of the term "manufactures." In the only sense in which it is significant for the purposes of this essay, and, indeed, for any economic history, it includes only articles produced for a wide market, by persons who depend entirely upon the income derived from such activity for their support. Of manufactures in this sense we may say that there were practically none in New England in 1810. We found that among the many articles listed as manufactures in the official reports of the period 1790–1810, by far the greatest part were either produced in farm-houses for family consumption, such as homespun cloth, soap, candles, maple-sugar, etc.,[5] or by village artisans for local demand, as, for instance, the products of the saw-mill, the grist-mill, the tannery, or the hatter's shop. A few instances were found of articles such as paper, tinware, buttons, and other "Yankee notions," which, through an ingenious method of marketing, were disposed of over a large area. Yet their production required no organization of industry on a large scale, nor did it lead to the concentration of a non-agricultural population. Only in the case of a very few industries is a separation of employments apparent. We have seen how imperfect this separation was in the iron industry. In the shoe industry, although factory methods had not yet been introduced, still the width of the market supplied had made the workers much more independent of the soil. Finally, in the newborn woolen and cotton industries we find great, although as yet undeveloped, possibilities for the creation of a manufacturing population. None of the towns in which these industries were carried on had a population of 5,000 persons,[1] except those such as Middletown, Hartford and Providence where commercial activity was, as we shall see, the principal cause of concentration. It seems hardly an exaggeration to say that there were no inland manufacturing towns in New England at this date. We must, therefore, look further for a market for agricultural products.

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[1] Digest of Manufactures. There were also three factories in the District of Maine, twelve in New Hampshire, and one in Vermont.

[2] Gallatin, Op. cit., p. 433.

[3] Ibid. p. 427.

[4] Hammond, M. B., The Cotton Industry. Publications of the American Economic Association. New Series. No. 1. New York. 1897. p. 241.

[5] See also infra, Chapter VI.

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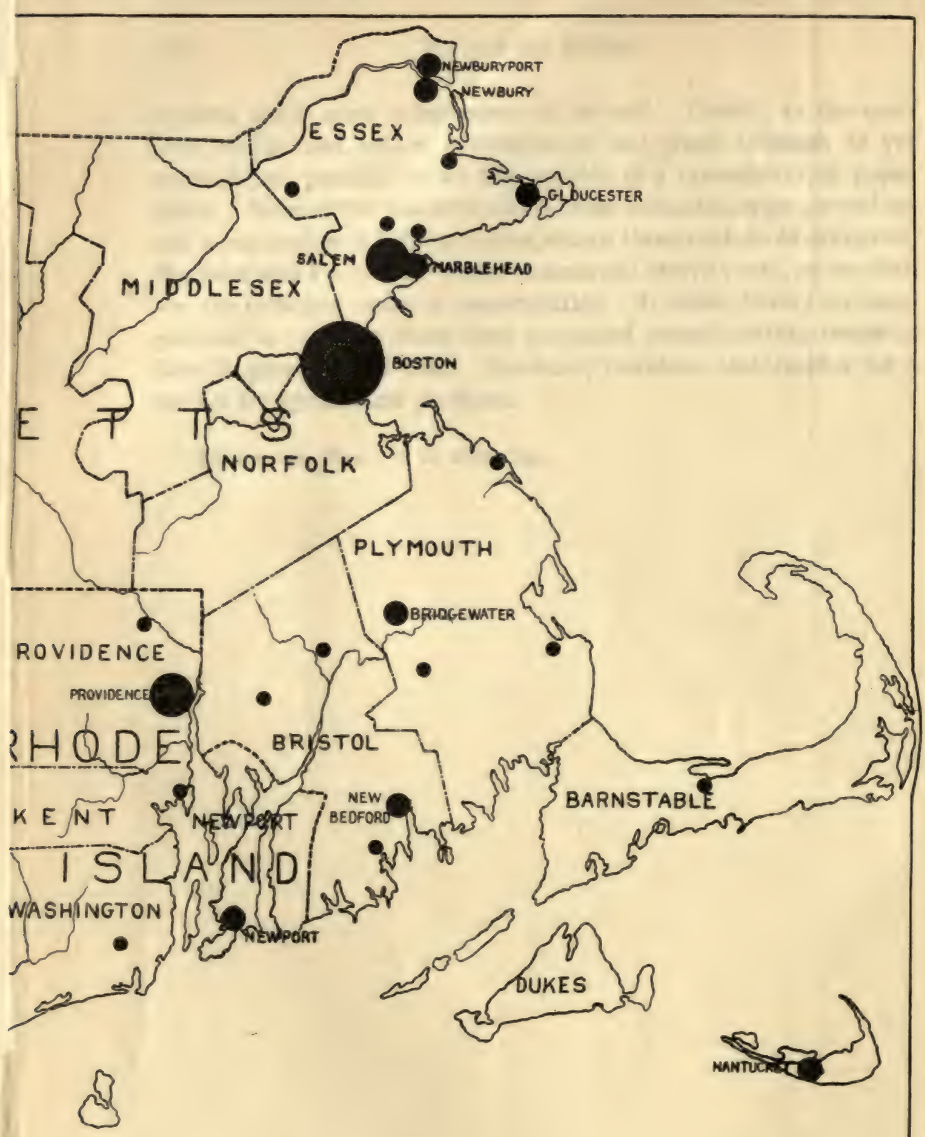
[1] Bridgewater, Mass., is an exception.


NEWBURYPORT
NEWBURY
ESSEX
GLOUCESTER
SALEM
MARBLEHEAD
MIDDLESEX
BOSTON
E T T S
NORFOLK
PLYMOUTH
BRIDGEWATER
ROVIDENCE
PROVIDENCE
RHODE
BRISTOL
NEW BEDFORD
BARNSTABLE
KENT
NEWPORT
ISLAND
WASHINGTON
NEWPORT
DUKES
NANTUCKET

DISTRIBUTION OF POPULATION IN SOUTHERN NEW ENGLAND 1810

CHAPTER II.

THE COAST AND RIVER TOWNS.

A glance at the map of southern New England as it was in 1810 will reveal the fact that all of the largest towns in these states were at that time to be found either on the seacoast or on the largest of the navigable rivers, the Connecticut. Has this fact any significance? Were the occupations of the bulk of the inhabitants of these towns different from those of the inland towns? Had maritime industries, such as fishing, trading, and shipbuilding developed to such an extent as to lead to a clear-cut separation of occupations? Is it possible that there was in these towns a concentrated population who furnished a market for the products of inland farmers? If so, what effect did the existence of such a market have on the agricultural population? These are the questions confronting us in this chapter.

Four Groups of Commercial Towns.

For purposes of analysis we may divide the commercial towns into four groups: (1) The towns along the north shore of Massachusetts Bay from Boston to Newburyport; (2) those on the south coast of Massachusetts, on Narragansett Bay and in Connecticut along the shore of Long Island Sound, including all the ports from New Bedford to New York; (3) the towns on Cape Cod, Martha's Vineyard and Nantucket; and (4) the river towns of the Connecticut Valley.

(*1*) *On Massachusetts Bay.*

The most important of these groups of towns was the first mentioned. Here were seven towns, not including Boston, ranging in population from 4,600 to 12,000, making a total altogether of 46,000 people. Add to this 34,000 for Boston and 5,000 for Charlestown, (at that time practically a part of the larger city) and we have a total of 85,000 persons living on a narrow strip of sea-coast some 50 miles in extent. It might well be expected that a large proportion of this population was supported by some non-agricultural activity. As far as Boston and Charlestown were concerned, there seems to have been a thorough divorce from the soil. On the little peninsula on which these cities were built there were about 3,000 houses. Their inhabitants were engaged in commerce with Europe and the West Indies, as well as with towns along the coast, and in a variety of manufactures. The importance of the commerce may be seen from the fact that for the years 1801–1810 the goods imported here had an average annual value of about $10,000,000. About 100,000 tons of shipping were owned in the city and the entries of foreign vessels alone amounted to 900 or 1,000 every year. Of the manufactures the distillation of rum seems to have been most important, 30 plants being devoted to that purpose. In 1796 rum was the principal export. Sugar was refined in eight plants, cordage made in eleven rope walks. Other manufactures were hats, plate-glass, tobacco, chocolate, sail cloth and paper. The shipbuilding business was active in Charlestown.[1]

The effect of this market for agricultural produce was evident enough to create considerable comment. Travelers were impressed with the density of population and with the evident prosperity of the farming towns nearby. Rochefoucauld says that the road from Marlborough to Boston (a distance of 27 miles) was almost a continuous village of handsome houses.[2] President Dwight says: "From Weymouth (11 miles) the country may be considered as one continual village, raised up by the commerce of Boston and forming a kind of suburb to the capital."[3] Much evidence, also, is available concerning the stimulus which was given to improved agriculture. Dickinson, writing in 1812, says: "A market for all varieties of fruit and vegetables is found in Boston. Hence the surrounding country although not especially fertile is highly cultivated."[4]

Besides the encouragement of market gardening, an increased attention to cattle-raising was evident in one nearby town;[5] a specialization in potatoes took place in another,[6] and an increase in the price of land in a third.[7] In general, however, it should be noticed that this improvement was limited to a narrow area, perhaps within a 20-mile radius from the city, and at times towns well within this limit were found to be in a backward condition. For instance, a writer says of Needham: "The town in general would admit of more settlements. Much of the land is yet uncultivated; and perhaps a third more inhabitants than the present number might be supported by a more extensive cultivation of the soil."[1] And yet this town was only 13 miles distant from the city and had the advantage of water transport on the Charles River.[2] The influence of the market in concentrating population in the towns in the immediate vicinity is noticeable.[3]

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[1] These facts come from Morse, Gazetteer, 1810; Dwight, Travels, I. 462; Kendall, Travels, II. 260; Rochefoucauld-Liancourt, Travels, I. 479; Lambert, Travels, II. 344.

[2] Rochefoucauld-Liancourt, Travels, I. 400.

[3] Travels, III. 110. Other evidence of the same nature is found in Harriott, Struggles Through Life, II. 33, 34, 36–37; Wansey, Journal, p. 48. American Husbandry (Anonymous). 2 vols. London. 1775. I. 60.

[4] Dickinson. Rodolphus. A Geographical and Statistical View of Massachusetts. Greenfield. 1813. p. 9.

[5] Abington, seventeen miles from Boston. Mass. Hist. Soc. Coll., II. 7: 115.

[6] Brookline, four miles distant. Papers of the Massachusetts Society for Promoting Agriculture. Contained in the Agricultural Repository and Journal. 10 vols. Boston. 1796–1826. Vol. II. Papers for 1807, p. 21.

[7] Hingham, twelve miles. Rochefoucauld-Liancourt, Travels, I. 482.

In 1810, Salem was the sixth commercial city in the United States and was said to have a per capita wealth larger than that of any other city. Its population was over 12,600. Its imports averaged $3,000,000 for the years 1801–1810 and it had 40,000 tons of shipping. Besides the Asiatic trade which made this port famous, its fleet engaged in the trade to the West Indies and in the fisheries.[4] The prosperity of this city was reflected in the large population of its agricultural neighbors, the towns of Danvers and Beverly.[5]

Newburyport sustained a population of over 7,600 on exactly one square mile of land, by means of its extensive commerce and its fishing, ship-building and rum-distilling industries. It had 160 vessels in the European and West India trade and 54 more in the Banks fisheries. The latter alone carried crews aggregating nearly 500 men.[6] The rural town which benefited by this market was Newbury, a few miles farther up on the Merrimac River. It had practically no village settlement and, aside from a few fishing enterprises, its inhabitants were all engaged in farming. They cultivated their land thoroughly and grew large crops.[1] The population of this town grew rapidly, showing an increase of 25 per cent in the decade 1800–1810.[2]

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[1] Mass. Hist. Soc. Coll., II. 1:180.

[2] Water transportation brought a region at a much greater distance within reach of the Boston market. This was Barnstable County which sent onions, flaxseed, corn and firewood thither. A fleet of 30 coasting vessels was said to have been regularly employed in carrying the latter product alone at this time. Mass. Hist. Coll. I. 3:14.

[3] Roxbury, 2,765; Dedham; 2,172; Dorchester, 2,930; Cambridge, 2,323. These were all towns of relatively small area.

[4] Sources for Salem are Morse, Gazetteer, 1810; Dwight, Travels, I. 408, 412. La Rochefoucauld-Liancourt estimated the fleet belonging to this port at 150 vessels, of which 100 were in foreign trade, 20 in the coasting trade, and 30 in the fisheries (ca. 1796). Travels, I. 474–475.

[5] Populations 3,127 and 4,609 respectively in 1810.

[6] These facts are from Morse, Gazetteer, 1810; Dwight, Travels, I. 400–401; Chastellux, Travels, II. 249; and Kendall, Travels, II. 29.

In Lynn the shoe manufacture seems to have been the chief industry of the rapidly growing population, although probably a considerable number were employed in the fisheries of Marblehead.[3] This town and Gloucester were celebrated for their fishing fleets. The former had 100 fishing vessels and 40 merchantmen, employing together in their crews some 1,100 men.[4] The Gloucester fleets employed about half that number.[5]

President Dwight sums up the fishing industry of these and other towns in Essex County as follows:

"Salem, Newburyport, Gloucester, Marblehead, Beverly, Haverhill, and Manchester are commercial and fishing towns; and contained together, in 1800, 33,620 inhabitants. (In 1810, 40,517.) To these may be added from Ipswich, Amesbury, Salisbury, Bradford, &c., enough to make the number 40,000; a greater number than are employed in this business in any county of the United States; if we except the cities of Philadelphia and New York. The commerce of this county is very great; and the fish caught and exported by its inhabitants, are more, it is believed, than one-half of all, which are exported from the Union. Its wealth is proportionally great . . . . The surface of this county is generally pleasant; the soil in most places pretty good; and the agriculture creditable to the inhabitants. The farmers are, accordingly, in good thrift."[6]

(2) *The Ports Along Long Island Sound.*

In the second general region of commercial activity, the northern shore of Long Island Sound, the principal points of concentration of the population were the cities of New Bedford, Providence, New London and New Haven. Of these Providence was by far the most important. It was not only the seat of an extensive coasting trade and port of entry for large quantities of foreign commodities, but was also the chief manufacturing town of New England. We have seen what rapid strides the cotton industry made in its vicinity, especially in the years 1807–1810.[1] President Dwight was informed that at this time five-eighths of the population of this city (10,071 in 1810), were directly or indirectly employed in this manufacture.[2] The same writer considered the woolen mills here the most extensive in the country. They were remarkable for the use of power from a 30 horse-power steam engine. The output was about 200 yards of broadcloth per diem.[3] Other industries carried on here were rum-distilling, shipbuilding, sugar-refining and the refining of whale oil. The activities of the little adjacent town of North Providence (16 square miles, 1,758 population) should be included in any description of the larger community. A fall in the Pawtucket River at this point furnished excellent water power. Dwight says: "Of this advantage the inhabitants have availed themselves. There is probably no spot in New England, of the same extent, in which the same quantity or variety of manufacturing business is carried on."[4] Among the industries which he enumerates are an iron furnace, a slitting-mill, a machine for cutting screws, three anchor forges, a cotton manufactory and three snuff-mills. The cotton manufacture had arisen also in a number of towns on the shores of Narragansett Bay near Providence. Of these Warwick and Smithfield were the most important. Both of these towns had about 3,800 inhabitants, who, besides farming, engaged in the coasting trade along the Sound.[5]

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[1] The answers returned in 1807 to the questionnaire of the Massachusetts Society for Promoting Agriculture showed this town to be far in advance of others in regions farther inland. Its farmers ploughed the land destined for grain crops twice instead of once, as was usual elsewhere; and they applied fertilizers more liberally. The results were average crops which were considered high in those days. Their corn yielded 40 bushels per acre; their potatoes 200 bushels; barley, 25 bushels; rye, 20 bushels; and wheat, 10 to 18 bushels. Papers for 1807, in Vol. II., p. 15.

[2] From 4,076 to 5,176.

[3] The shoe industry we have already considered. See p. 273.

[4] Morse, Gazetteer, 1810; Dwight, Travels, I. 421; Kendall, Travels, III. 28; Rochefoucauld-Liancourt, Travels, I. 477.

[5] Morse, Gazetteer, 1810.

[6] Travels, I. 424.

This combined manufacturing and commercial interest, centering in Providence, had a plainly noticeable effect on the density of settlement along the shores of the bay. The country immediately surrounding the city was so "lean" that it could scarcely support its own inhabitants; consequently a wider area than would be usual was affected. Attleborough and Rehoboth in Massachusetts, distant some ten to twelve miles by land, grew rapidly in population and prosperity as a result.[1] Kendall says of the town of Portsmouth, on an island in the bay some 15 miles distant: "The lands on this island, which are rich and dear, are often divided into much smaller portions than is usual in the United States in general; but they are then employed in raising culinary vegetables for the consumption of Newport and more distant places. Fifty, twenty, and even ten acres, are in many instances the extent of a farm, or rather garden-ground."[2]

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[1] Supra, pp. 274-275.

[2] Travels, IV. 477–479. Among those "indirectly interested" he includes the workmen of all sorts whose labor was necessary for the erection of factories, etc.

[3] Ibid., p. 480.

[4] Op. cit., II. 18.

[5] Morse, Gazetteer, 1810; Kendall, Travels, I. 330.

A calculation of the density of population in the ten towns nearest to Providence around the shores of the Bay, gives some striking figures; these towns varied from 52 to 290 persons per square mile. In only one, North Kingston, did the figure fall below the average for the state, 61.6 per square mile. The little town of Warren had a density of over 290 on its four square miles; Bristol had 224; North Providence 110; and Portsmouth 105. The average density for the ten towns was 103.2.[3] When this figure is compared with the normal density of an inland agricultural town, 45 to 50 per square mile,[4] a very marked difference is apparent. Without doubt the greater density was due to the employment of a part of the population in non-agricultural pursuits. The opportunity of supplying this body of people, and also the West India market, encouraged the farmers to more intensive cultivation and hence the supporting power of the land was increased to a point far beyond that of inland regions.

New Bedford had 5,600 inhabitants, of whom a considerable proportion lived in a village of 300 houses. They were engaged in ship-building and in the carrying trade, principally between New York and the ports of southern Europe. Some ships were also engaged in trading from this port to the East and West Indies. Its fleet consisted of 90 to 100 ships and brigs, of about 250 tons each, and 20 to 30 small vessels; their crews numbered in all from 1,000 to 1,500 men.[5] The nearby town of Westport is said to have profited by the market in New Bedford.[6]

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[1] Dwight, Travels, II. 18.

[2] Travels, II. 6.

[3] These figures were obtained by dividing the Census figures for 1810 by the areas given in Pease and Niles' Gazetteer.

[4] The average density of population in six inland counties in Massachusetts was 48 per square mile; in Connecticut the figure for three inland counties was 42.

[5] Kendall, Travels, II. 215–216; Dwight, Travels, III. 58; Mass. Hist. Coll., II. 3:18. The formerly prosperous whaling business had declined ca. 1810.

[6] Dwight, Op. cit., III. 57.

Returning to the mainland, we find that between Providence and New York almost every town dabbled somewhat in commerce, sending out ten or a dozen small vessels more or less regularly to engage in carrying food supplies and firewood to the West Indies, New York and the Southern states. Some carried on small manufactures and others built a few ships each year. Stonington, Conn., furnishes a typical example. It owned 1,100 tons of shipping, including ten or fifteen fishing vessels, three regular packet-sloops running to and from New York, and one sealing ship. Perhaps a third of its 3,000 inhabitants lived in a village of 120 houses clustered about the wharves. Such a community would demand little in the way of food products which could not be supplied within its own limits.[1]

There are only three towns of this group, New Haven, New London and Norwich, all in Connecticut, which deserve especial attention. Concerning the first of these considerable detailed information is to be found in the Statistical Account of the City of New Haven by Timothy Dwight, at that time president of Yale College.[2] The principal interest of its 7,000 inhabitants was foreign and domestic commerce. This was carried on by a fleet of about 80 vessels, three-fourths of which were in the former branch. Some twenty of these were comparatively large ships, carrying crews of forty men and boys. They made extended voyages to the seal-fisheries of the Pacific Ocean, bringing back surprising profits to their owners.[3] The exports of this port averaged $560,000 a year for the years 1801–1809, and the imports $390,000 during the same period. Besides this there was some business done in the re-export of foreign commodities, amounting on the average to $56,000 a year.[4] Some manufacturing was done for export as well as for the local market. In 1806 the principal wares of this sort sent out were candles, 120,000 lbs.; leather, 20,000 lbs.; and nails, hats and shoes in smaller quantities.

Enough material is accessible to furnish a complete and detailed account of the occupations of the inhabitants of this town in 1810. The commercial interest was represented by 29 houses concerned in foreign trade, 41 dry goods stores and 42 grocery stores. There were about 300 craftsmen of all sorts, the carpenters heading the list with 50 men. The professional classes numbered 48, of whom 16 were teachers in the public schools and the same number lawyers. Adding to this total some 200 clerks, assistants and helpers, we arrive at a figure, 700, which would include all these persons and might be taken as the sum of the non-agricultural class. To estimate what proportion of the total population they and their families formed, this figure should be multiplied by 5.47, the average size of a family in the town.[1] The sum thus obtained is 3,829 persons, or less than 55 per cent of the total population,[2] who may be thought of as being supported by occupations other than agriculture. They lived in a compact settlement of 750 houses in the center of the town and carried on their businesses, trades and professions in an equal number of shops and stores.

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[1] These facts are taken from Pease and Niles, Gazetteer. Other towns along the Connecticut coast, described there, had interests similar to those of this town but, in general, on a smaller scale. They were Groton, Lyme, Saybrook, Killingworth, Guilford, Stratford, Fairfield, Norwalk, Stamford, and Greenwich.

[2] Published by the Connecticut Academy of the Arts and Sciences. Vol. I., No. 1, New Haven. 1811.

[3] For a description of this business see Trowbridge, Thomas Rutherford. Ancient Maritime Interests of New Haven. In The New England States. (W. T. Davis, ed.) 4 vols. Boston. 1897. Vol. I., pp. 780–788.

[4] Dwight quotes these figures from a report of the Secretary of the Treasury. Travels, I. 158.

How did the remaining 3,100 people, or 45 per cent, get their living? It is only logical to assume that they were farmers, and the testimony of travelers supports this assumption. Lambert found several large fields of maize growing in the center of the town.[3] Dwight says: "The supplies of flesh and fish are ample, and of vegetables, sufficient for the demand of the inhabitants, most of whom are furnished from their own gardens."[4] In his Statistical Account he gives a detailed list of the vegetables raised in these gardens.[5] La Rochefoucauld-Liancourt, writing some fifteen years earlier, had said: "Most of them (the inhabitants) have farms in the neighborhood, which supply provisions for their families. These small possessions in the hands of the towns-people, make it impossible for those who have a surplus of produce to find a sale for it in New Haven; it is, accordingly, sent to New York."[6] Wood, however, was an important import, about 7,500 cords being necessary each year for fuel. This was brought from neighboring coast and river towns by water. The influence of the market in New Haven, although it could not have been very great, was noticeable in the adjoining towns of Northford, North Haven and East Haven.[1]

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[1] This, of course, on the assumption that each person in the above enumeration was the head of a family. In case this assumption were not justified, the proportion of the non-agricultural to the total population would be even smaller. The figure 5.47 is taken from a computation made in 1787. See Statistical Account, p. 80.

[2] To this figure might be added the 60 paupers then supported from the town treasury.

[3] Travels, II. 297. His visit was made either in 1807 or 1808.

[4] Travels, I. 162.

[5] Pp. 23–24.

[6] Travels, I. 523. The importance of this trade with New York will be considered later. See infra p. 295.

New London and Norwich seem to have duplicated the state of affairs found in the town just described, but on a smaller scale. The first mentioned had not yet (1810) recovered from its severe treatment at the hands of Benedict Arnold during the Revolution. Its principal non-agricultural interest, fishing, employed some 55 small vessels, besides a half-dozen or more brigs which exported a large part of the yearly catch to England. Of its 3,300 inhabitants perhaps one-half lived in a compact village, which besides 300 to 400 dwellings, contained 80 to 100 stores and taverns. Considering the diminutive area of the township, four square miles, it is probable that most of its food supplies were brought across the Thames River from the large and prosperous town of Groton.[2]

Norwich, with five times the area of New London, had only a few hundred more inhabitants. Besides the usual coasting trade[3] and the building of a few ships yearly, they engaged in a variety of small manufactures, being favored by cheap transportation, via the Thames and the Sound, and exceptionally good water power. Some of the articles there produced were: iron bars and wire, buttons, clocks and watches, chocolate and earthenware. There was no considerable concentration of population in this town, its three villages having perhaps 50 to 100 houses each.[4]

(3) *Connecticut River Towns.*

Another region in southern New England where a population might have been supported by commerce was the valley of the Connecticut River, from Springfield to the Sound. Here an area of roughly 800 square miles sustained 54,000 persons, an average of 67.5 to the square mile. But of the 16 townships into which this area was divided, only two show any considerable size. The fertility of the soil for which this valley was noted, rather than any great amount of non-agricultural activity, seems to have been the cause of a density of population not generally found at this time in farming communities. All the towns below Hartford owned a few small vessels that traded along the coast and to the West Indies. Some built a few ships and occasionally we find the beginning of manufactures, as in the case of the paper, glass, and powder mills of East Hartford,[1] and the gin-distilling business in Windsor and East Windsor.[2] The river furnished such cheap transportation that even so bulky a commodity as building-stone could be quarried in Chatham and East Haddam and marketed in Boston and New York.[3]

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[1] Dwight, Travels, I. 182; II. 40, 486.

[2] The facts concerning New London are taken from Morse, Gazetteer, 1810; Pease and Niles, Gazetteer; Kendall, Travels, I. 293–295; and Dwight, Travels, II. 502.

[3] As we shall see later, the exportable products of a considerable inland area found their outlet at Norwich. Dwight had high expectations of the future importance of this trade. He says: "At a future day it must, I think, be one of the there most commercial places in Connecticut. For a great part of the eastern division of the state, it must ever be the most convenient port; and there are now turnpike roads branching to it from almost every town in this region." Dwight, Travels, II. 33.

[4] For Norwich see Dwight, Op. cit., loc. cit.; Kendall, Travels, I. 303–304; Morse, Gazetteer, 1810; and Pease and Niles, Gazetteer.

Hartford had in 1810, 6,000 inhabitants, of whom perhaps one-half were concentrated in a village of 400 to 500 houses in the center of the town. Here also were the shops, stores and wholesale trading houses. As Hartford was not a port of entry at the time, its commerce is hard to estimate.[4] Its trade with regions farther inland, especially the towns lying on both sides of the river for 200 or more miles to the northward, was quite large. As a depot for the transshipment of agricultural products, and especially those important by-products of pioneer agriculture, potash and pearl ash, Hartford was much more favorably situated than either New Haven, Norwich or New London.[5] It is probable that a large part of the commercial wealth of the place was derived from this source. Besides the usual craftsmen, which were well represented there, Hartford seems to have had little industrial activity.[6]

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[1] Dwight, Travels, II. 268.

[2] Pease and Niles, Gazetteer, pp. 65, 90.

[3] Ibid., pp. 279–280.

[4] The nearest indication I have been able to find is contained in the papers submitted with the Application for a Branch of the Bank of the United States in Hartford (1817). MSS. in library of the Connecticut Historical Society, Hartford, Conn. According to a list (E) there included, 278 vessels paid toll in Hartford in 1816. Of these 189 were sloops; 61, schooners; 26, brigs, and 2, ships. There were also 300 entries not liable to duty. These were probably the flat-boats, rafts and smaller craft from up the river.

[5] This is made clear by a map among the papers referred to in Note 4. See also Dwight, Travels, I. 203–204; and Kendall, Travels, I. 86–87.

[6] The woolen mill described by General Washington in his diary in 1788, quoted in Bishop, American Manufactures, I. 418, had been established only a short time. It ran rather irregularly and was poorly equipped. See Wansey, Journal, p. 60.

Middletown depended for its prosperity chiefly upon its commerce. Since the entries at the port included goods and ships of Wethersfield and Hartford, they give us but little clue to the trade of the city itself.[1] In 1815 there were 24 vessels, measuring altogether 3,500 tons, owned here. Up to 1810 the following manufactures had been established: A rum distillery with an annual output of 600 hogsheads; a paper mill employing 9 to 12 men; a powder mill whose product was worth $1,000 per annum; and a cotton factory, erected 1808, of 330 spindles. The inhabitants numbered 5,300 of whom a part lived in a village of 300 houses. The small influence which this settlement exerted as a market for agricultural produce may be seen in the declining population of the outlying districts. In Field's Statistical Account of Middlesex County we read: "The inhabitants of the southern, western and northern parts of this town (Middletown), are very generally farmers, and as the lands in those parts have long since been taken up for farms, the population has increased very little for many years. There were 80 dwellings in Middlefield (a village in the south-western part of the town), in 1745, and but one more in 1815. The population of Westfield, for the same length of time, has been nearly stationary. . . . Young enterprising men, trained to husbandry, unable to get farms in their native town have removed from time to time, to other parts of the country."[2] Had there been opportunity for the sale of a considerable amount of agricultural produce in Middletown, either for consumption by the merchants and artisans or for export to the West Indies, this emigration would undoubtedly have been checked.[3]

(4) *Cape Cod and Nantucket.*

There were two other districts in Massachusetts where maritime enterprises employed a considerable population, who purchased their food-stuffs either from the farmers in their vicinity or from those in other parts of the state. These were Barnstable and Nantucket Counties, the former including Cape Cod and the latter the island and town of the same name. Cape Cod was recognized as a unique region by the travelers of the period and at least two of them devote considerable space to its description.[1] They divide the Cape in general into two parts; an eastern section, from the elbow to Provincetown, and a western section, from the same point to the mainland at the town of Barnstable. The total population of the county, somewhat over 22,000 in 1810, was divided almost equally between the two sections. On the eastern end of the Cape, fishing and shipping seem to have been much more important than agriculture. All the men in the prime of life were employed at sea, leaving as a labor force to cultivate the fields only the boys and old men. Their exertions were able to draw only the scantiest of crops from the thin and sandy soil. Consequently not only beef, flour, and grain, but even fodder for the cattle, and in the winter, butter, vegetables and cheese must be imported. Some of these products came from the more largely agricultural towns to the westward, others from Boston, and the supplies of rye and maize in part even from the Southern states.[2] Yet such was the productivity of the "ocean farms" that these supplies could be purchased in sufficient quantity to support a population of considerable density,[3] in fairly good circumstances.[4]

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[1] Dwight, Travels, I. 190, gives a table showing the value of the imports for this district during the years 1801–1810. The annual average was $292,000. Here, as in other tables of the sort given by this author, the value of the imports is calculated from the amount of duties paid, assuming an average rate of 25%.

[2] Field, Op. cit., 38–39. The facts quoted in the description of Middletown are from this work, pp. 32–53.

[3] See Appendix B. Emigration from Inland Towns in Southern New England, 1720–1820.

On the sand flats at the end of the Cape, in Provincetown, there lived some 200 families who got their living entirely from the sea. Perhaps in no other town in New England could a population have been found so completely non-agricultural. The reason is obvious. There was no soil to be cultivated. "The earth," says Dwight, "is here a mere residence, and can scarcely be said to contribute at all to the sustenance of man. All his support and all his comforts, are elicited from the ocean."[5] A small meadow of marsh grass pastured two horses, ten yoke of oxen, and 140 cows, the sum total of live stock owned in the town. There were one or two gardens at some distance from the village, but almost all the food supply, except fish, was brought from Boston. For this the inhabitants were enabled to pay by the sale of cod, herring, bass, mackerel, and other fish caught in the waters of the bay and on the banks of Newfoundland. The annual value of the catch of the two varieties first mentiontioned was over $140,000. Shipping was also an active business; many of the men being employed on coasting vessels owned in Boston and in neighboring towns. On the whole, the people were industrious and lived well; many of them were even able to put by enough money to purchase farms in the interior, where they spent their declining years.

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[1] Dwight and Kendall. The former visited Cape Cod in 1800 and described it in his Travels, Vol. III., pp. 63–97. The latter's visit, made in 1807, is described in his Travels, Vol. II., pp. 127–183. A considerable amount of information concerning the towns in this region, though of a somewhat earlier date, is to be found in the Collections of the Massachusetts Historical Association, Series I., Vols. 3, 8, and 10.

[2] Even firewood had to be imported, some of it coming from Maine. Mass. Hist. Soc. Coll., I. 8: 195.

[3] A writer describing the town of Dennis says: "A tract of ground not larger than Dennis with a soil so unproductive, would in an inland situation be capable of supporting few inhabitants. But when the Census was taken in 1800, there were found on it fourteen hundred souls. A great number of these persons derive their subsistence from the sea." Mass. Hist. Soc. Coll., I. 8: 133–134.

[4] Kendall makes an exception in the case of Truro. Travels, II. 16.

[5] Dwight, Travels, III. 84.

Conditions on the western end of the Cape were considerably more favorable to agriculture. Here, as in most coast regions of New England, the inhabitants divided their energies between the sea and the land. Nearly every village owned from 5 to 20, and sometimes as many as 30 fishing and coasting vessels of from 40 to 70 tons. The towns of Falmouth and Barnstable were especially active in maritime enterprise, the former having a fleet of 50 or 60 vessels, chiefly coasters of large size employed in carrying products of the Southern states to New York and Boston.[1] Agriculture, however, was not neglected in these towns. The inhabitants cultivated their soil carefully, manured it with sea-weed, and not only reaped crops sufficient for their support, but had also a considerable surplus of onions, salt hay, flaxseed and grain for exportation to the towns on the eastern end of the Cape and to Boston.

The evaporation of salt from sea-water was a quasi-manufacture carried on in many of the towns along the Cape. In all, there were, in 1802, 136 works established for this purpose. They consisted merely of a series of shallow vats or tanks, into which the water from the ocean was pumped by the power furnished by windmills. The salt thus obtained amounted to about 100,000 bushels per annum, which at that time was worth nearly $42,000. The local fisheries furnished a ready market for this product.[2] Other works of this sort were to be found on the islands of Martha's Vineyard and Nantucket, and in a number of coast towns in Plymouth and Bristol Counties.[1]

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[1] Mass. Hist. Soc. Coll., I. 8: 127–129.

[2] The best description of these works, utilized largely by both Dwight and Kendall, is to be found in Mass. Hist. Soc. Coll. I. 8: 135–138. Dwight entertained great hopes for the future of this industry, hoping to see it extended along the eastern coast of the United States "from St. Mary's to Machias." This hope was, of course, disappointed by the discovery and development of the mineral salt deposits in New York and other states in the following decades. Travels, III. 76–77.

The township on the island of Nantucket in 1810 was entitled to rank as the fourth in Massachusetts, in wealth and in the number of its inhabitants.[2] Here on an area of about 42 square miles there lived 6,800 persons, most of them in a compact village containing some 800 houses.[3] The chief industry of the place was the whale fishery, which employed a fleet of 120 ships, manned by 1,200 sailors. On the island were 15 or 20 spermaceti works, which refined the oil thus obtained and manufactured large quantities of candles. The former of these products was exported widely to the cities of the United States and to London, Marseilles and the Levant. Owing to the sterility of the soil and to the greater profit to be obtained from whaling, agriculture received scanty attention. More than one-half the area of the island was given over to the pasturage of flocks of sheep, amounting to 7,000 in all, together with cows, oxen and horses in smaller numbers. The land under cultivation amounted to 1,350 acres, about one acre to each family on an average, yielding a small amount of maize and a few vegetables. For most of their food supply, consequently, and even for firewood, the people were dependent on the mainland. Flour and Indian corn were brought in coasters from New York, Philadelphia, and Baltimore; provisions for the whaling vessels were obtained in Boston and from the shore towns in Connecticut. The only export of an agricultural nature was wool, less than one-half the total product being consumed on the island. The importance of the market in Nantucket to the farmers of southern New England seems to have been considerably diminished by the import of grain referred to above.[4]

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[1] Bishop, American Manufactures, II. 97.

[2] In population this town was surpassed only by Boston, Salem and Newburyport.

[3] The best sources of information on Nantucket at this period are the Topographical Description of Nantucket, by Walter Folger, Jun., contained in the Collections of the Massachusetts Historical Society, Series I., Vol. 3, pp. 153–155, and the Notes on Nantucket in the same collections, II. 3: 18–38. See also Dickinson, Geographical and Statistical View, p. 32; and Morse, Gazetteer, 1810. St. John de Crevecoeur gives an interesting, but not altogether reliable description of the island and of the manners and customs of its people in his Letters of an American Farmer. London. 1783. pp. 114–212.

The practice of land tenure in common, which persisted in Nantucket long after it had died out elsewhere in New England, is described by Folger, Op. cit., 154.

[4] On the neighboring island of Martha's Vineyard, in Duke's County, conditions

Summary—Relation of the Maritime Industries to Agriculture.

In concluding this survey of the peculiar economic characteristics of life in the coast and river towns, let us return to the inquiries propounded at the beginning of this chapter. We have endeavored to answer these questions specifically in the detailed consideration of the various groups of towns. In general these answers lead us to the conclusion that the maritime industries were not, at the beginning of the nineteenth century, sharply differentiated from agriculture. As Tudor pointed out, the coast population were economically a race of amphibians.[1] They got their living both from the sea and from the land; the proportion of their income which was derived from either element depending partly on the fertility of the soil in their particular locality and partly on the advantages of their situation for fishing and trading. Where the soil was sterile and sandy, as on the eastern end of Cape Cod and on Nantucket, there we found almost the entire support of the inhabitants obtained from maritime industries; but in almost all the other towns on the coast and rivers, agriculture was still the fundamental industry, as it was inland, and fishing and trading were auxiliary occupations. As accessory sources of income for farmers, the maritime industries were comparable to the occasional small manufactures carried on in inland towns; in neither case was large scale enterprise to be found, nor the sharp separation of these employments from agriculture.

Only in a few seaport towns did we find a strictly non-agricultural population, deriving their incomes from trading and fishing and purchasing therewith the products of inland farmers. Such towns were found along the north shore of Massachusetts Bay, on Cape Cod and the island of Nantucket, along the coast of Long Island Sound, and in the valley of the Connecticut River. How important

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were considerably different. Here the population was only 3,300 on 42 square miles. The land was more fertile than that of Nantucket, and although a few whale ships were sent out each year from Edgarton, the principal port, the majority of inhabitants were supported by agriculture. The export of a commercial product, the wool shorn from their large flocks of sheep, was the chief point of difference between the farm life in these towns and those on the mainland. See Morse, Gazetteer, 1810. Arts. Martha's Vineyard and Edgarton.

[1] "Most of the people near the sea coast of the latter have been sailors for a time and occasionally go on some short voyage, if they find they can earn a few more dollars than by staying at home. There are many villages, where a population of farmers would be found to be good sailors in a moment if the occasion required it." Tudor, William. Letters on the Eastern States. 2 ed. Boston. 1821. p. 118, note.

to the farmers of southern New England was the market thus supplied? That the farmers in the near vicinity, say within a radius of fifteen or twenty miles, of the largest city, Boston, benefited largely from their opportunities to sell farm produce, is a well-established fact.[1] The area affected by the markets in such smaller cities as Salem, Newburyport, Providence, and Nantucket was narrower in proportion as the numbers of their inhabitants were less. Finally in a third class of towns of 3,000 to 7,000 population, such as New Haven, New London, Norwich, Middletown and Hartford, farming seems to have been the occupation of about one-half the inhabitants,[2] and consequently the influence of their markets was hardly appreciable.

A simple calculation of the relative strength of the commercial as compared with the agricultural population may serve to make this summary more concrete:

In the nine towns on Massachusetts Bay there were....	85,000	persons
On the eastern end of Cape Cod........................	11,000	"
In the town of Nantucket............................	6,800	"
In five towns on Long Island Sound...................	32,000	"
In two towns on the Connecticut River...............	11,000	"
Total...	145,800	

If we accept the figures for New Haven as typical of the conditions in the last two groups of towns we may subtract one-half the population of each of these groups, as representing the agricultural element in these towns. The total then becomes 124,300. This figure, it should be understood, does not represent a total of all persons in the three states of southern New England who were engaged in non-agricultural activities. It is intended merely to give an approximate indication of the size of commercial and manufacturing groups who were so concentrated as to furnish a definite and reliable market for the sale of agricultural products. These groups amounted to 15.4 per cent of the total of the three states, 809,000 in 1810; but their importance to the farmers at large was much less than this figure would indicate. A glance at the map (facing p. 277) will show how inaccessible this market was to the great body of inland farmers. Of what importance to a farmer in the center of Worcester County, Massachusetts, or in Tolland County, Connecticut, was the market in Salem, Newburyport or Nantucket? We have already seen that

[1] See supra, pp. 278–279.

[2] As we have seen in the case of New Haven, 45 per cent. were so occupied; this proportion would naturally have been larger in the smaller towns in this class.

the area affected by the largest market in southern New England extended only some fifteen or twenty miles from the city. A consideration of the transportation system of the time in a later section[1] will make even clearer that the fringe of commercial towns on the seacoast must have depended for its agricultural products upon farmers in towns adjoining, or only a few miles distant. Some exception must, of course, be made in favor of towns located on navigable rivers such as the Connecticut, the Thames, the Housatonic and the Merrimac; but in general the market in commercial towns can scarcely be said to have had any influence on the prosperity of the population or on agricultural methods in the inland region.

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[1] See Chapter IV.

CHAPTER III.

COMMERICAL RELATIONS OF SOUTHERN NEW ENGLAND WITH THE SOUTHERN STATES AND THE WEST INDIES.

In our reconstruction of the economic environment of the inland farmer, we must not neglect to consider the possibility of his exporting some of the produce of his land to regions outside of New England. A market in a foreign country or in some of the other states of the Union would have been, to some extent at least, a compensation for the lack of a market in commercial and industrial towns at home, and would have modified to that extent the farmer's economic position.

Markets Outside New England: (a) New York City.

Outside New England there were three districts whose inhabitants purchased food-stuffs from the farmers in the towns of Massachusetts, Rhode Island and Connecticut. These were: (1) the city of New York; (2) the Southern states, and (3) the West India Islands. In the nearest of these markets, the city of New York, there was a population of nearly 100,000, concentrated on the island of Manhattan and a few smaller islands. This population, supported largely by commerce, offered a market larger than any in New England. It was easily accessible to the coast towns of Connecticut and Rhode Island and, to a less degree, to the towns of Berkshire County in Massachusetts and Litchfield County in Connecticut, by way of the Hudson River. However, in this case the New England farmers had to meet the competition of the energetic and progressive Dutch settlers on Long Island,[1] as well as of the nearer situated towns of eastern New Jersey and of those in New York state along the Hudson River.

We have seen that almost every town along the Sound as far east as Providence sent out small sloops to carry firewood and agricultural produce to New York.[2] In Fairfield County, the nearest county in Connecticut, the coast towns had a fleet of 20 or 30 such vessels regularly employed in transporting grain, flour, beef, pork, and potatoes to the city.[1] New Haven seems to have traded with New York more extensively than any other port on the Sound. In his Statistical Account of the former city, President Dwight included a statement of this coasting trade for the year 1801, compiled from the shipping books of merchants. The largest items were: Cheese, 220,000 lbs.; pork and beef hams, 24,000 lbs.; pork, 1,900 bbls.; beef, 1,700 bbls.; butter, 800 firkins; lard, 600 firkins; corn meal, 1,000 hhds., and 1,200 bbls.; rye flour, 230 bbls.; barley, 1,500 bu.; Indian corn, 300 bu.; rye, 200 bu.; oats, 530 bu. The only vegetables shipped were beans, 280 bu.; and potatoes, 160 bu.[2]

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[1] See Weld, Isaac, Jun., Travels through the States of North America, . . . during the Years 1795, 1796, and 1797. 4 ed. 2 vols. London. 1807. II. 372–373.

[2] Supra, p. 283.

Although these figures do not indicate any great amount of trade, yet it would be a mistake to judge the importance of the New York market by figures such as these, for the bulk of these products were not consumed in the city but trans-shipped to the West Indies.[3]

(*b*) *Regions of Specialized Agriculture.*

In order that a population supported by agriculture alone may furnish a market for the farmers in another region, it is necessary that the former shall be raising a staple product which they can sell to a wide market. To the cultivation of this staple they will then find it profitable to devote all their labor and capital. In order to secure the greatest profit from the comparative advantage which they have in the cultivation of a peculiar product, they will neglect general agriculture and rely for their food supply upon their ability to purchase from farmers in regions where such specialization has not been found profitable. Thus one of the first forms of the geographical division of labor arises.

Such a specialization was to be found in 1810 in three areas to the southward of New England. There were: (1) the tobacco plantations of the Chesapeake lowlands in Virginia and Maryland, (2) the rice and cotton plantations of the coastal plains of South Carolina and Georgia, and (3) the sugar plantations of the West India Islands.

(*1*) *The Chesapeake Lowlands.*

Cheap water transportation made these three areas almost equally accessible to the New England farmer, but their importance to him varied widely in proportion to the competition which he must face from the back-country districts of general agriculture. The size of the population engaged in specialized agriculture was also a factor of prime importance. In both these respects the area first mentioned, the Chesapeake lowlands, was of least importance. The decline of the plantation system was already evident in Virginia and Maryland in 1775. "The tobacco staple was a resource of decreasing value, and many people were finding it necessary to resort instead to the production of food-stuffs for market."[1]

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[1] Pease and Niles, Gazetteer, art. Fairfield.

[2] Op. cit., pp. 67–68.

[3] Kendall, Travels, I. 9.

A more general agriculture with considerable areas devoted to wheat and other grains, and in the back-country to cattle raising, was taking the place of the former specialization.[2] The planters in the tide-water region in 1810 were raising beef and pork, poultry and mutton, apples and other fruits in sufficient quantities for their own consumption, and wheat and corn for export.[3] The exceptional plantations which must depend on outside food supplies were very easily supplied from the back-country region where a general system of agriculture had always prevailed, for in Virginia and Maryland this region was in close contact with that of the plantations. Consequently we are not surprised to find that the New England farmers had no market in this region.[4]

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[1] Philips, Ulrich B., Plantation and Frontier. In Documentary History of American Industrial Society. (John R. Commons, ed.) 10 vols. Vol. I., p. 83.

[2] Jefferson in his Notes on Virginia. (1787) Boston. 1832. p. 174, had noted this tendency. In his estimate of the exports are found: Wheat, 800,000 bu.; and corn, 600,000 bu., with smaller amounts of peas, beef, and pork. See also Morse, Gazetteer, 1810, art. Virginia.

As early as 1767, John Mitchell had written of this region: "The tobacco colonies enjoy a better soil and climate, [than "the more Northern colonies"] and have by that means hitherto had a good staple commodity, . . . so long as their lands are fresh and fertile; but most of them are worn out with that exhausting weed, and will no longer bear it; they are turned into Corn and Pasture grounds, which produce nothing but Corn, Cattle and Wool, as in the Northern colonies; . . . " And of Virginia in particular he says: "the soil is in general very light, and so shallow, that it is soon worn out by culture, especially with such exhausting crops as *Indian* Corn and Tobacco. It is for this reason that they are now obliged to sow Wheat, and exported fifty or sixty shiploads the last year." The Present State of Great Britain and North America. London. 1767. pp. 175–176, 177.

[3] See the description of Prince George County, Virginia, in Mass. Hist. Soc. Coll., I. 3:89.

[4] A discussion of the commerce of Maryland is to be found in Carey, Matthew. American Pocket Atlas. 3 ed. Phila. 1805. p. 85; in Winterbotham, W. Historical, Geographical, Commercial, . . . View of the United States of America. 4 vols. New York. 1796. Vol. III., p. 43; and in Morse, Gazetteer, Art. Maryland.

(2) *The Coastal Plains of South Carolina and Georgia.*

On the coastal plains of South Carolina and Georgia a much different state of affairs was to be found. Here on an extremely fertile strip of lowlands, lying parallel with the coast and stretching about fifty miles into the interior, were rice swamps and cotton plantations employing large numbers of negro slaves. Through the invention of Whitney's gin in 1793, the cost of producing upland cotton had been greatly cheapened. With the increase in the demand which ensued, the production of this staple had been extended from the seacoast toward the upland region. The exports of cotton from the port of Charleston increased from 1,000,000 lbs., in 1795, to 8,300,000 in 1801. It was then of greater value than the combined exports of rice and indigo, the other two staples of this region.[1] The extension of cultivation was accompanied by an increasing specialization on the plantations. There was a tendency for the planters to neglect the production of food-stuffs and to turn their whole attention to the staple crops. This tendency is clearly observable in the descriptions of South Carolina in the period 1800 to 1810. La Rochefoucauld, writing just before the beginning of the nineteenth century, describes several plantations, of whose area a considerable proportion was then devoted to the cultivation of Indian corn, barley and potatoes. In one passage he says: "All the planters keep great numbers of oxen, cows, and pigs, which procure their food easily, and without the least expense, in the large forests which belong to the plantations."[2] The following quotation from a description of 1802, however, shows that the commercial interest had then come into the foreground. "In the husbandry of Carolina, two objects are particularly kept in view by the planters and farmers. The first is to raise something for sale; and the second is to secure provisions for family concerns. To the first the principal attention is directed; as being the source from whence all pecuniary advancements are made: while the other is only attended to, as opportunities permit. . . . In the lower country cotton and rice are cultivated largely for sale; while Indian corn, cow pease and long potatoes, are only planted sufficient for the yearly consumption of the settlement: and on many of the tide swamp rice plantations, no provisions, but potatoes, are planted; their produce being only equal to the support of the plantation for a few months. The rest is supplied by the purchase of Indian corn, brought down the rivers from the middle parts of the state; and also imported from some of these United States."[1]

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[1] Drayton, John. A View of South Carolina. Charleston. 1802. p. 118 and note.

[2] Travels, I. 598. See also pp. 586, 597.

Lambert, writing a few years later, said in describing plantation life in this state: "Everything is made subservient to the cultivation of cotton and rice. . . . With hundreds of slaves about them, and cattle of various kinds, they are often without butter, cheese and even milk, for many weeks."[2] In 1809 Ramsay, the historian, in speaking of the increase in the cultivation of cotton and rice since 1795, said: "These two staples have so monopolized the agricultural force of the state that for several years past other articles of export and even provisions have been greatly neglected. In their great eagerness to get money the planters have brought themselves into a state of dependence on their neighbors for many of the necessaries of life, formerly raised at home."[3]

The plantation system, however, had not been extended over a very large part of the lowland region in 1810. There were still many small planters and farmers who, while devoting most of their attention to the staple products, raised sufficient grain and meat for their own consumption and that of the few negroes whom they employed. It becomes important, therefore, to delimit as closely as possible the area of large scale, specialized agriculture; for only in this way can the extent of the market for food-stuffs be determined. This may be best accomplished by an examination of the relative numbers of blacks and whites in the seacoast counties of South Carolina and Georgia. The plantation system in its full development meant the presence of large numbers of slaves with relatively few white masters and overseers. Such a system, therefore, could hardly be the rule in districts where the whites were equal or numerically superior to the blacks. Yet such was the case in all but four districts in South Carolina, and in all but five in Georgia.[4] These nine districts formed

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[1] Drayton, View, p. 113.

[2] Lambert, Travels, II. 148. Lambert's travels were made in 1806–1808.

[3] Ramsay, David. History of South Carolina. 3 vols. Charleston. 1809. II. 214.

[4] In South Carolina:

Districts	*Total Inhabitants*	*Slaves*
Charleston	57,480	41,945
Colleton	24,903	20,471
Beaufort	20,428	16,031
Georgetown	22,938	16,568
	125,749	95,015

a continuous belt along the coast of the two states for some 250 miles. They contained in 1810 a total population of about 150,000, of whom over 110,000 were slaves. This, then, was the extent of the market for food supplies in that general region known as the Southern states.

The back-country region of these two states could have very easily supplied this market, except for the presence of a strip of pine barrens intervening between the upper country, where general agriculture was carried on, and the plantation district. This middle country, a sterile area varying from fifty to seventy miles in width, producing little in the way of food-stuffs except in the river valleys, formed a barrier to trade between the regions on either side. It was the presence of the barrier region that forced the planters of the lowlands to buy a part at least of their grain, vegetables, dairy products and salt-meat from the Middle and New England states. It would be a mistake, however, to suppose that the back-country furnished no supplies at all to the planters. The intervening region was crossed in at least three places by rivers navigable to the edge of the upper country, by vessels of 70 tons burden.[1] There was, besides, some carriage of country produce by wagons from the upper country to the coast.[2]

The products of the Middle and Northern states were carried hither in the small coasting vessels which, as we have seen, were owned in so many New England ports. They brought grain from New York and Pennsylvania; and from New England, cheese and butter, dried fish, salted beef, apples, potatoes, hay and cider. Some of the cargoes contained various products of household industry such as the coarse linen tow-cloth used for garments for the slaves,

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In Georgia:

Districts	*Total Inhabitants*		*Slaves*	
Chatham	12,946		9,049	
Bryan	2,836		2,306	
Liberty	5,313		3,940	
McIntosh	2,660		1,819	
Glynn	1,874		1,092	
Camden	1,681		735	
		27,310		18,941
Total for both states		153,059		113,956

These figures are taken from the second U. S. Census (1800).

[1] See Drayton, View. pp. 30–31.

[2] Ibid. p. 141, and La Rochefoucauld-Liancourt, Travels, I. 630.

straw hats, woodenware and, finally shoes which, as we have found, had risen to the dignity of a manufacture.[1]

In this analysis we have seen the market included under that vague term "the Southern states," shrinking in reality to the population of a modern city of fair size, but spread over 250 miles of seacoast, and distant over 800 miles from the ports of New England. And besides, New England shared the privilege of feeding these 40,000 planters and their 110,000 slaves with the back-country and the Middle states. Only a few New England farmers, those in the seacoast towns and in the towns behind such ports as New Haven and New London, in Connecticut, could have had any access to this market. The mere fact that some products were shipped from such towns to a market so small and at such a distance is the best sort of evidence of the lack of any market at all at home. It shows how strenuously the farmers were trying to supply this lack and to break through the bounds of their self-sufficient economy.

(3) *The West Indies.*

The third region outside of New England, in which its farmers found a market for agricultural products, was the sugar-producing islands of the West Indies. There were several circumstances which made the demand for outside food supplies greater in these islands than in the cotton plantations of South Carolina and Georgia. In the first place, the raising of sugar on large plantations with slave labor had long been established and had made great progress through the eighteenth century.[2] Large importations of negroes from Africa followed, and a considerable increase in the white population. In 1810 there were probably about 2,000,000 persons in all the islands of the archipelago, of whom only a few hundred thousand were whites.[3] The principal sugar producing islands were owned by England and

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[1] See Belknap, History of New Hampshire, III. 218; Gallatin, Report on Manufactures, p. 439; Bond, Phineas. Letters (1787–1794). In Annual Report, American Historical Association, 1896–1897. P. 651.

[2] The value of the exports of the English islands to the home country had increased from £629,533 in 1699 to £6,390,658 in 1798. Between the years 1699 and 1775 the amount of sugar exported to England from these islands increased from 427,573 cwt. to 2,002,224 cwt. See Edwards, Bryan. History . . . of the British Colonies in the West Indies. 3 ed. London. 1801. II. 595–598.

[3] The figures, based largely on estimates, in Morse's Gazetteer for 1817, Vol. II., app., are 2,430,000. In Worcester, J. E. Universal Gazetteer, 2 ed. Boston. 1823. Vol. II., p. 944, the sum of the population of the islands owned by various nations is put at 1,700,000.

France. Their possessions contained at this time about 1,000,000 negroes and less than 200,000 whites.[1]

We have seen that one of the reasons why the rice and cotton plantations of the South Carolina-Georgia coastal plain furnished a better market for the agricultural products of New England than did the Chesapeake lowlands was that the distance separating the plantations from the backcountry was greater in the former case than in the latter. In a certain sense it might be said that in the West India islands there was no back-country. That is, there was no sharply defined region where the commercial products could not be raised; no uplands occupied by farmers carrying on a general agriculture and selling food supplies to the planters.[2] But this is far from saying that the whole of the arable area was given over to the cultivation of the staples. The statistics given for Jamaica in 1791 show that of the 1,740,000 acres in that island under cultivation, only 767,000 were in sugar plantations, whereas an almost equal area, 700,000 acres, was used for breeding and grazing farms and 350,000 acres for raising the minor staples and provisions.[3] In Hispaniola, now called Haiti, there were in 1790, 793 sugar plantations, 789 of cotton, 3,117 of coffee, 3,160 of indigo and 623 smaller farms where yams, grain and other provisions were grown.[4] More significant, however, for we must remember that the farms were much smaller in acreage than the plantations, is the fact that even on the latter, a considerable area was given over to the pasturing of cattle and horses.[5]

Between the years 1790–1810 there had undoubtedly been much progress in the direction of specialization, especially in Jamaica.[6] Edwards had written at the former date: "In most other states and kingdoms, the first object of agriculture is to raise food for the support of the inhabitants; but many of the rich productions of the West

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[1] Perhaps the most reliable figures for the English islands are those for 1791 given by Edwards, History, II. 2; Whites, 65,305; blacks, 455,684. For the French islands a summary of various censuses, 1776–1786, quoted by Morse, Gazetteer, 1810, gives a total of 63,682 whites and 437,736 blacks.

[2] There were highlands in the interior of many of the islands but these were so heavily wooded as to be inaccessible. See Edwards, History, I. 248–249.

[3] Ibid. I. 248.

[4] Ibid., III. 142–143.

[5] Edwards estimates that on a plantation of 900 acres, two-thirds of the land would be pasturage and woodland. Op. cit., I. 248.

[6] The negro insurrection in Haiti, 1791–1801, checked the progress of the industry in a large part of that island.

Indies yield a profit so much beyond what can be obtained from grain that in several of the sugar islands, it is true economy in the planter, rather to buy provisions from others, than to raise them by his own labor. The produce of a single acre of his cane fields, will purchase more Indian corn than can be raised on five times that extent of land, and pay besides the freight from other countries. Thus not only their household furniture, their implements of husbandry, their clothing, but even a great part of their daily sustenance, are regularly sent them from America or Europe."[1] The increase in the output of the staples and the growth of population are both evidences of this tendency to a more and more commercialized agriculture.[2]

By 1810 a large part of the timber products and food-stuffs consumed in the British islands was imported from the United States.[3] In the years 1801–1803 the average annual amounts of the principal commodities imported were: Corn, 500,000 bu.; bread and flour, 233,000 bbls.; Indian meal, 28,000 bbls.; beef and pork, 36,000 bbls.; fish (dried) 50,000 quintals; fish (fresh) 23,000 bbls. Of timber and timber products, there were annually imported from the United States: pine boards, 27,000,000 feet; 36,000,000 shingles; 12,000,000 staves; and 10,000 tons of miscellaneous timber.[4] The value of these commodities and others, such as live stock, horses, mules, dairy products and vegetables shipped from ports of the United States to the possessions of France, England, Spain, Denmark and Sweden in these islands in the ten years, 1802–1811, amounted on the average to $1,225,000 per year. In the first years of this period the annual export was considerably greater than the average, because of the relaxation of many of the restrictions on the commerce of their colonies during the wars in which France and England were engaged. In the years 1807–1809, on the other hand, the figures fell much below the average, owing to the Embargo and Non-Intercourse laws then in effect. The figures for 1810, a normal year, were $1,229,308, corresponding quite closely with the average for the whole period.[1]

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[1] Edwards, History, II. 459.

[2] Jedidiah, Morse, in The American Universal Geography. 6 ed. Boston. 1812. Vol. I., p. 666, estimates the increase in population in Jamaica at 100,000 in the period 1787–1811.

[3] The importance which the West India colonists ascribed to this trade may be appreciated by reading some of the pamphlets of a political nature printed in London 1800–1810. In the discussion of the impending war and of the advantages to be gained by opening more widely the ports of the islands to the American trade, the dependence of the West Indies on the United States for food supplies is strongly emphasized. Three typical pamphlets of this sort are Brown, Alexander Campbell. Colony Commerce. London. (ca. 1790); Jordan, G. W., Claims of the British West India Colonists. London. 1804; and Medford, Macall. Oil without Vinegar, . . . or British, American, and West Indian Interests Considered. London. 1807.

[4] These figures are obtained by division of the totals for the three years given by Medford, Oil without Vinegar, app. No. 2. He claims to have had them from official documents.

The pertinent question for the purposes of our essay is: What part of this sum represented the food products shipped from New England farms? In answering the question we must not be misled by the frequent references to the active trade carried on by the coast towns of Connecticut and Rhode Island with the West India islands. When we remember how small were the vessels employed (according to the terms of Jay's treaty of 1794 they were limited to 70 tons),[2] and that they regularly made only two voyages each year,[3] we are more likely to proceed with caution. Then there is to be considered the share in this trade which was carried from the ports of the Middle and Southern states, such as Philadelphia and Charleston. The superiority of the back-country of New York, Pennsylvania, Maryland and Virginia in the production of grain, especially of wheat, had been apparent as early as 1790.[4] In fact, the seacoast towns of the New England states were continually importing flour and grain from the Middle and Southern states, partly for consumption and partly for re-export.[5] On the other hand in the export of provisions, the three states of southern New England were at this time superior to any other group. They were credited with about one-half of the total

[1] These figures are taken from Seybert, Adam. Statistical Annals. Philadelphia. 1818. pp. 134 ff.

[2] Hildreth, Richard. History of the United States, rev. ed. 6 vols. New York. 1877–1880. Vol. IV. 540.

[3] This is the statement made by Jordan, G. W. Claims of Colonists. 90–91.

[4] The figures for the export of the principal grains, 1791–1792, given in Coxe, View, p. 414, are:

	Wheat	*Corn*	*Rye*
Virginia	395,000 bu.	685,000 bu.	—
Pennsylvania	131,000	414,000	10,00 bu.
New York	186,000	227,000	956
Maryland	140,000	232,000	42
Massachusetts	154	78,000	1,600
Connecticut	—	36,000	—
Rhode Island	438	5,100	—

[5] Governor Sullivan, of Massachusetts, wrote to President Jefferson in 1808: "The seaport towns are supported almost entirely by bread from the Southern and Middle States." Quoted in Adams, Henry. History of the United States. 1801–1817. 10 vols. New York. 1889–1891. Vol. IV., pp. 254–255.

exports of salted beef and pork, butter, cheese and lard, potatoes and onions; one-seventh of the hams and bacon and practically all of the fresh meat and live stock. For these products the West India islands formed the only foreign market. Assuming that the share of the New England states in this market remained constant in the next twenty years, we may form a rough estimate of the total amounts of their exports thither in 1810, by applying the proportions given above to the average annual exports of these products from the whole United States for the ten years, 1801–1810.[1] According to this calculation, the three states under consideration would have been shipping about 960 tons of butter, 486 tons of cheese, 850 tons of lard, 9½ tons of hams and bacon; of beef and pork together, 75,000 bbls., 22,160 head of live stock and 4,000 dozen of poultry.

Estimate of the Importance of these Markets.

For a comparison of the importance of each of the three markets, in the commercial towns, in the Southern states, and in the West Indies to the New England farmer we must rely on three criteria: (1) the size of the non-agricultural or specialized agricultural population in each region, (2) the extent of their dependence on outside sources of food supply, and (3) the amount of competition from other food-producing regions for the various markets. Tested in all these ways, the West Indian market seems to have been most important. The population to be supplied was from eight to ten times as large as in either of the other two regions; it was nearly as dependent on outside supplies of foodstuffs as were the commercial towns along the coast of New England, and more so than the rice and cotton plantations in South Carolina and Georgia; and, most important of all, it had no back-country of general agriculture. This last fact, however, does not mean that the New Englanders had a monopoly of the market, for in supplying this as well as the market in the Southern states they had to meet the competition of the Middle states.

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[1] The average annual exports from the United States, 1801–1810, were as follows: Beef, 76,300 bbls;. pork, 59,000 bbls.; butter, 1,926,000 lbs.; cheese, 972,000 lbs.; lard, 1,700,000 lbs.; hams and bacon, 1,340,000 lbs.; potatoes, 70,000 bu.; cattle, 6,400 head; horses, 4,300; sheep, 7,760; hogs, 3,500; poultry, 4,000 dozen. All of these items, except the live stock show a considerable increase over the figures for 1791. This is especially noticeable in the figures for butter, cheese and lard, the totals for the three being over 200 per cent greater at the later date. The total of live stock had, on the other hand, decreased from 38,000 head (average for the years 1791–1794) to 22,000. This would seem to show that the farmers of New England were finding it more profitable to fatten and slaughter their stock at home and to give greater attention to dairy products as exports.

These figures are taken from Pitkin, Timothy. A Statistical View of the Commerce of the United States of America. Hartford. 1816. pp. 89–129.

The importance to the inland towns of these markets, in the Southern states, and in the West Indies, as well as in the coast towns of southern New England, depended chiefly on two circumstances: (1) upon the size of the markets, *i.e.*, the quantity of produce which they would absorb, and (2) upon their accessibility. The determining factor in the latter case was, of course, the cost of transportation. We have seen that the total amount of agricultural produce demanded by these various regions was not large. In order to estimate accurately what these markets meant to the inland farmers, we must go a step farther and determine, if possible, how the trade in farm products was distributed through the inland country. If equally distributed among the inland towns, this trade would have meant very little to any one of them; if carried on by the towns in only a few favored regions, it might have altered their economic situation considerably, but for the inland towns as a whole it would have had little significance.

In order to answer these questions fully, it is necessary to investigate the general conditions of internal trade in southern New England and especially the state of the transportation system. These matters will be taken up in the following chapter.

CHAPTER IV.

INTERNAL TRADE AND THE TRANSPORTATION SYSTEM.

In the absence of a non-agricultural population centered in manufacturing towns and cities, the internal trade of a country must perforce be limited to the exchange of goods between the agricultural regions in the back-country and the commercial towns, if there be any, on the seacoast or on navigable rivers. The inland farmers will endeavor to secure in this way as great a quantity as possible of the commodities which they either could not produce at all, or only at too great an expense. The amount of this trade will depend chiefly on the demand for the farmers' products from the outside, upon the amount which will be taken at a price high enough to pay the costs of production and of transportation. A second determining condition is the state of the transportation system. This, however, is of only secondary importance; for with the most perfect and the cheapest means of transportation, there will be no trade unless there is somewhere a population desirous and capable of making purchases. On the other hand, if there is a steady demand for goods, strenuous efforts will soon be made to improve and cheapen the carrying system. Such improvements, of course, come tardily; it may be from lack of capital available for investment or from a failure to realize the benefits of such improvements; and there is always the limitation imposed by the state of mechanical and technical progress, as, for instance, in the centuries before the invention of the locomotive. Once established, it is true, a cheaper method of transportation promotes an extension of the geographical division of labor, and so stimulates and increases trade. But nevertheless, it is the market which is of primary importance as regards internal trade; for unless there is a purchasing population, either actual or potential, at one end of a route, expensive improvements of that route will never be attempted.

One of the best indications of the volume of internal trade of this sort is the size of the commercial towns. In the sea and river ports there will be a non-agricultural population of merchants and shipowners roughly proportional to the amount of trade carried on by them between the back-country and foreign parts. Boston was the only port of New England of any considerable size at the end of the eighteenth century. Concerning this port an observing traveler had remarked that its growth was much slower than that of other eastern seaports, and had attributed this circumstance to the fact that its trade with the "back settlements" was less than that of such cities as Baltimore, New York and Philadelphia.[1] A considerable portion of the inhabitants of Boston as well as of other ports, such as Salem, Providence, New Haven and New London, were engaged in occupations quite independent of commerce with the back-country. They caught fish and exported them, and were engaged in carrying the products of the Southern states to foreign countries.

The Waterways.

We naturally look first for indications of internal trade to the waterways, which have always furnished the cheapest method of transportation. There were three large rivers running in roughly parallel courses from north to south, which furnished a means of communication between the inland towns of New England and its seaports. Near the western boundaries of Vermont, Massachusetts and Connecticut, flowed the Hudson. The few towns nearest this river in the two latter states sent small quantities of beef, cheese and grain to New York, to be consumed there or trans-shipped to the West Indies. From southern Vermont, potash and other timber products, maple sugar, furs, bar-iron and nails, live cattle and horses, and some dairy produce and provisions came overland to Troy in New York state and thence were carried down the river.[2] The towns of Albany and Hudson also served as collectors of these products and distrib-

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[1] See Weld, Travels, I. 55. The following table shows the growth of population in these four cities 1790–1810:

	1790	*1800*	*1810*	*Increase per cent*
Boston	18,000	25,000	33,000	94.7
Philadelphia	28,500	41,200	53,700	88.4
New York	33,000	60,400	94,000	184.8
Baltimore	13,500	26,500	35,600	163.7

Boston had, it is true, increased somewhat faster than Philadelphia in the period 1800–1810. This was probably due to the larger share which the former port had in the carrying trade in the years preceding the Embargo and the Non-Intercourse Acts.

[2] Lambert enumerates oak and pine staves, lumber, maple sugar, wheat, flour, butter and cheese, salt beef and pork, pot- and pearl ashes, horses and oxen as the commodities shipped from this region. Travels, II. 502–503; Mass. Hist. Soc. Coll., II. 9: 138.

utors of the West India commodities and European manufactures received in return.[1]

The principal inland waterway in eastern New England was the Merrimac River. Originally it had been navigable only as far as Haverhill, about twenty miles. Above this point its rocky bed and frequent falls had rendered it of little use in transportation of any commodities except lumber. In 1803, however, a canal was opened from Boston harbor across Middlesex County to the junction of the Concord and Merrimac rivers where the city of Lowell is now situated. Although this work represented a considerable investment of capital, its usefulness was limited by its many locks and shallow bed.[2] The principal commodities transported to Boston by this means seem to have been timber and logs. By land Boston received cattle driven in from the surrounding country and from southern New Hampshire to be slaughtered and packed for exportation, and in the winter some grain and dairy products came overland on the snow.[3]

The Connecticut River furnished the only means of cheap transportation through the central region of New England. Although originally navigable only as far as the falls at Enfield, Connecticut, some sixty-five miles above its mouth, a series of canals constructed in the years 1790–1810[1] had made possible the passage of small boats to the village of Barnet in northern Vermont, about 180 miles farther.[2] The only vessels which could be used above Hartford were flat-bottomed craft of 10 or 20 tons burden. These floated downstream easily enough, but when going in the reverse direction had to be slowly and arduously propelled by poling, with only occasional aid from small square sails when the wind was favorable. According to Dwight[3] there was at about this time a fleet of fourteen of these boats which made regular trips between Hartford and the head of navigation in Vermont. Each round trip required twenty-five days and only nine could be made in a season. Potash and pearlash, staves, shingles, grain, beef, flaxseed and linseed oil were brought down to Hartford, and rum, salt, molasses and some drygoods, iron and tea were carried back. Heavy timber was floated down in rafts.[4] The total amount of this traffic in a season was probably smaller than a fair-sized river steamer would now carry in a few days.[1]

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[1] See Weld, Travels, I. 57. A considerable portion of this trade was diverted in the opposite direction by the restrictions of 1807–1808. It was evidently comparatively easy to smuggle goods across the frontier into Canada, and there was almost continuous water transportation via Lake Champlain and the St. Lawrence River to Montreal and Quebec, whence the goods were trans-shipped to the West Indies, their original destination. For a description of this traffic see Lambert, Travels, I. 100–104, 139–140, 225–226, 245, 250–253, 260–262; and Kendall, Travels, III. 277, 283, 294; also Williams, Samuel. The Natural and Civil History of Vermont. 2 ed. 2 vols. Burlington (Vermont). 1809. II. 365–367. This writer remarks: "The trade itself has been of great advantage, in promoting the settlement of the country; but the carriage of the articles, being chiefly by land, and through long and bad roads, has been attended with great expense; and has much prevented the raising of wheat, and other kinds of grain. Ibid. p. 366.

[2] The work when completed in 1808 cost about $500,000. It was 28 miles long and contained 22 locks. Its depth, 3½ feet, permitted navigation by boats of 24 tons. See Gallatin, A. Report of the Secretary of the Treasury on the Subject of Public Roads and Canals. Washington. 1808. p. 51. The traffic through this canal in 1806 amounted to 9,400 tons. Morse, Gazetteer, 1810. art. Middlesex Canal.

[3] See Belknap. History of New Hampshire, III. 80–81. Rochefoucauld-Liancourt, Travels, II. 160.

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[1] These canals were built around falls or rapids at South Hadley and Miller's Falls in Massachusetts; at Water Quechee, now called Sumner's Falls, in Vermont; and at falls in the town of Lebanon, New Hampshire, about three miles above White River Junction.

The canal at South Hadley was begun in 1790 and finished in 1795. It was two miles long, twenty feet wide, but only three feet deep. Originally the difference in level between the ends of the canal was overcome by means of an inclined plane. The boats were drawn on a cradle up this plane by means of a windlass operated by water power. Later, in 1805, a system of seven locks was substituted and the bed of the canal was deepened. The best description of these works is to be found in Holland, J. G. History of Western Massachusetts. 2 vols. Springfield. 1855. I. 305–307. See also Rochefoucauld-Liancourt, Travels, II. 210, and Dickinson, Geographical and Statistical View, p. 30.

The Miller's Falls canal in the town of Montague was completed in 1800. It was almost three miles long, twenty feet wide, and contained ten locks. The water from the river was diverted by means of a dam 17 feet high and 325 yards long. See Hayward, John. Gazetteer of Massachusetts. Revised ed. Boston. 1849. pp. 421–422; Dwight, Travels, II. 335.

At Bellows Falls a canal about one mile long was cut through solid rock at a cost of $90,000. See Biglow, Timothy. Journal of a Tour to Niagara. Boston. 1876. p. 118. Biglow visited the place in 1805. See also Dwight, Travels, II. 83–85.

The two other canals were smaller works and were hardly in operation before 1810. They, as well as the others, are described in Bacon, Edwin M. The Connecticut River. New York. 1906. pp. 310–324.

[2] Dickinson, Geographical and Statistical View, p. 26.

[3] Travels, IV. 142–143.

[4] This list is from Kendall, Travels, III. 218. These are the commodities most frequently mentioned in the advertisements of traders in the newspapers published in such river towns as Springfield, Northampton, Greenfield, Walpole and Hanover.

At Hartford the goods received from the upper river were transshipped into small schooners and sloops and, together with more provisions and small quantities of vegetables, were sent down the river to New York and to the West Indies. These additional commodities seem to have been produced almost entirely by the farmers in a few towns in the immediate vicinity of Hartford and Middletown, such as Farmington[2] and Wethersfield. The towns lower down the river had practically no share in this trade[3] except in furnishing cargoes of wood for fuel. In 1789 the traffic on the lower river had employed a fleet of about 100 vessels, of which 60 made voyages to the West Indies and the remainder engaged merely in the coasting trade.[4] The foreign branch of this trade was considerably damaged by the restrictions of 1807–1808 and later by the War of 1812. In 1815 the whole value of the exports from the Middletown customs district, which included all river ports, amounted to less than $100,000.[5]

The commodities brought up the river to Hartford were the same as those carried on farther up the river, with the addition of a variety of European dress goods and some other imported manufactures, such as crockery, glassware, etc.[6]

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[1] Some indication of the amount of this traffic may be gained from the figures given by Dwight, Travels, I. 287, for the tonnage locked through the canal at South Hadley, which amounted on an average to about 7,000 tons per season. At the canal at Bellows Falls 4,300 tons paid tolls in 1803 and 5,460 tons in 1807. Kendall, Travels, III. 217.

[2] See Porter, Historical Discourse, p. 46.

[3] Field says of the towns in Middlesex County that whereas they send "immense quantities" of wood to New York and other towns, they export very little beef, pork, grain and provisions, "the supply hardly sufficing for the consumption of the inhabitants." Statistical Account of Middlesex, pp. 12, 14, 17.

[4] Field, Statistical Account, p. 8.

[5] Ibid. p. 127.

[6] The general store in this region shows a far greater assortment of goods than those in inland towns, but the staple commodities on which greatest emphasis was laid were in all cases the same: Salt, sugar, molasses, rum and iron. A typical advertisement is that of Bolles, Savage and Co., appearing in the Middletown Gazette, Nov. 3, 1803. This firm has to sell 40 hogsheads of Muscavado sugar, also a quantity of molasses and of Windward Islands rum. They have "constantly on hand" iron, salt and other groceries for which they will receive all kinds of country produce in payment. Some of the commodities which they offer to buy are flaxseed, oats, corn, potatoes, rye-flour, and horses. There were in this issue advertisements of 16 such general stores besides specialized dealers

The Roads and Highways.

The Connecticut River and the two other water routes parallel with it served the transportation needs of the towns on their banks, and carried produce for farmers living within a distance of fifteen to twenty miles on either side. In the intervening territory between the three river valleys, all transportation had to proceed overland on the common highways. All roads in the country at this time were poor; those in New England only somewhat less so than in other sections. The task of laying out and repairing highways had been originally entrusted to the town governments. The selectmen of the town determined what roads were necessary and two "surveyors" were annually appointed to clear new roads and to make such repairs as they deemed advisable. No taxes were collected for this purpose, but the surveyors were empowered to call out all the able-bodied men with their teams on certain days "having respect to the season of the year and the weather" to work on the roads.[1] In spite of the fines which were imposed for neglecting this duty, many absented themselves and often those who did appear seem to have regarded the occasion as a sort of junketing party.[2]

in salt, iron and tinplate, linseed oil, paints and varnishes, leather, bottles and paper.

In another issue, that of August 5th of the same year, a general store offers to buy brown tow cloth, 10 firkins of butter, 200 bushels of potatoes, 500 ropes of onions, and 10 three-year-old mules. Other dealers will buy cider, livestock, apples, hay, rags, hides, skins, oak and hemlock bark, and beeswax.

In the columns of the Hartford Courant the same sort of advertisements appeared including, however, a somewhat greater variety of "European goods."

[1] See Province of the Massachusetts Bay, Acts and Resolves, 1693–1694. Ch. 6, Vol. I., p. 136. Also Public Records of the Colony of Connecticut, 1643. Vol. I., p. 91.

[2] In many Massachusetts towns this practice of "working out the highway tax" persisted until after the Civil War. In the Report of the (U. S.) Commissioner of Agriculture for 1866 the methods pursued and the results accomplished are described as follows: "No one who has once witnessed the process of 'mending roads' in a small New England country town, needs any argument to convince him that a system more ingeniously devised to accomplish nothing was ever invented. The surveyors, in the first place, are usually elected at the town meetings, and, as the office of surveyor is of no pecuniary profit beyond mere day wages, persons of peculiar skill, could such be found, would not usually accept it. In fact, the farmers of the district take their turns in the office, any respectable man being deemed fully competent. Often some citizen who lives on a road out of repair seeks the office, and is elected, and takes the opportunity to expend most of the tax for the year on his own road, and leaves the rest of the district to be attended to in the future. The surveyor selects, not the season when repairs

As a result, the work, if we can call it work, was most inefficiently done. It was not until about 1775 that this system began to be abolished in Connecticut and provision was made for laying taxes in certain towns for the repair of their roads.[1]

How the Roads Were Laid Out.

The roads first laid out were those serving the inhabitants of the town in passing from farm to farm and in going to and from the center of the town where stood the meeting house and country store.

are most needed, but that which is most convenient for himself and his brother farmers, after their spring work is done, or after harvesting, and notifies every person assessed to come and work out his tax. As the citizens in town meeting fix the price to be allowed for the labor of men and animals in thus working out the taxes, it is usually fixed at the highest prices which the best men and teams could command, and often much higher, every voter who intends to 'work out his tax' having a direct interest to fix a high price, and they constitute a large majority in town meeting. The time appointed 'for working out the highway tax,' as it is rightly termed, arrives, and at eight o'clock a.m. a motley assemblage gathers, of decrepit old men, each with a garden hoe on his shoulder; of pale, thin mechanics from their shoe shops, armed with worn-out shovels; half-grown boys, sent by their mothers, who, perhaps, are widows; with perhaps the doctor, the lawyer, and even the minister, all of whom understand that 'working on the road' does not mean hard labor, even for soft hands. The farmers bring their steers, great and small, with the old mare in the lead, with a cart; and the Irishman drives up with his rickety horse-cart and the mortal remains of a worn-out railroad horse, to do his part. The only effective force on the ground consists of two or three yokes of oxen and a half-dozen men hired by the surveyor with money paid by non-residents, or men whose time is of too much value to themselves to be wasted on the road. Here is the surveyor, who never held the office before, and who knows nothing of road-making or of directing a gang of hands. The work must go on in some way. The roads are soft and full of ruts, or rough with protruding stones. The stones must be covered, and the road rounded up into shape. The cattle are all put to the big town plough, which is set in at the side of the road; the boys ride on the beam, and the drivers put on the lash, and the gutters, half filled with the sand and soil and leaves of a dozen seasons, are ploughed up, the shovel and hoe men waiting very patiently for their turn to work. The teams then stand idle; and this mixture, more fit for the compost heap than anything else, is thrown upon the road, and finally leveled and smoothed by the old men with their hoes; and thus the road is mended. This is not an exaggerated picture of 'working on the road' in many small towns. The occasion is regarded rather as a frolic than as serious labor; the old men tell stories to an audience always ready to lean on their tools and listen. The youngsters amuse themselves by all sorts of practical jokes, among which is the favorite one of overloading the carts, when any carts are used, so as to stick the teams."

[1] The privilege of imposing such taxes was granted by the legislature in Connecticut. Thirty-one towns received this privilege in the years 1774–1780. See Public Records of the State of Connecticut, Vols. XIV–XVIII.

The next step was to lay out ways of communication from town to town.[1] It was difficult to secure co-operation between the autonomous local governments in this matter, the result being that such roads were often neglected.[2] Hence it became necessary to pass laws providing that new highways from town to town should be laid out, or old ways altered, by a jury appointed by the county court.[3] In case the towns to be thus connected lay in different counties, a special act of legislature was necessary, appointing a committee to do the work.[4] This method was not only cumbersome and expensive but often unsatisfactory.[5] In Connecticut, as early as 1750 these methods had to some extent been replaced by immediate action of the legislature in appointing committees to lay out more direct routes between towns in distant parts of the state between which there was considerable travel.[6]

When the routes had been determined by one or another of these methods, a narrow track was cleared of trees and rocks (in newer towns the stumps were often left standing in the road), and the logs were drawn away to furnish material for causeways and bridges.[7] Thus the roads were made passable for travelers on horseback and for ox-carts. The methods of repairing were equally simple. A contributor to the collections of the Massachusetts Historical Society from Holliston, in Middlesex County, about twenty-five miles from

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[1] Dwight outlines the steps in the laying out of roads in his Travels, II. 121–122.

[2] See Public Records of Colony of Connecticut. 1684. Vol. III., p. 157.

[3] The original provision for this action is found in the Colonial Records of Connecticut, IV. 314–316, and in Massachusetts Bay, A. and R. 1693–1694. Ch. 6. A later act somewhat simplifying this process is found in the same, 1756-1757, Ch. 18.

[4] See Col. Rec. Conn. X. 107. (1752.)

[5] As in the case of the town of Woodbury which was required to keep in repair three parallel roads laid out at different times by the Litchfield county court between the towns of Litchfield and Bethlehem. Resolves and Private Laws of Connecticut, 1789–1836. Hartford. 1837. p. 607.

[6] As between Hartford and New Haven, New Haven and New London, New Haven and Windham. The most famous of these early "state roads" was that leading from Hartford through Simsbury, New Hartford, Canaan and Norfolk towards Albany, called the Greenwoods Road. In all of these cases there was no appropriation of state money for this purpose, but the towns through which the route lay were ordered to make and repair the road. This, however, they regularly failed to do. So in the case of the Greenwoods Road; although laid out in 1759 it was not constructed until 1764 and in 1766 was in "great want of amendment." Col. Rec. Conn. Vols. XI and XII.

[7] Belknap, History of New Hampshire, III. 375–378, describes in detail the clearing of new roads.

Boston, thus described the system in vogue: " . . . . the stones, which for years had been thrown out of the way against the walls, are thrown back, each side of the way is ploughed, the stones are covered with dirt and the middle of the road is left the highest."[1] Roads so constructed and so repaired were bound to be deep with sand in summer and equally deep with mud in the fall and spring. It is no wonder that travelers complained bitterly of them.[2]

Means of Conveyance.

The primitive sort of conveyances used at this time is perhaps the best commentary on the state of the roads. The farmer did his errands, and sometimes carried his produce to the country store or his grain to the mill, on horseback. The doctor, lawyer and minister made their professional visits in the same way. Except between towns and cities where stage-coach routes had been established,[3] journeys both long and short were made in the saddle. For the transportation of bulky produce, ox-carts of a construction substantial enough to defy the worst roads were employed. Chaises with two wheels had been introduced in some towns about the middle of the eighteenth century, but four-wheeled wagons did not make their appearance until about fifty years later. They were still objects of curiosity at the time of the War of 1812.[1]

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[1] Series I. Vol. 3, p. 18.

[2] A traveler from Providence, R. I., to Pomfret, Conn., wrote: "In May, 1776, I went to Pomfret, thirty-six miles in a chaise; the road was so stony and rough, that I could not ride out of a slow walk, but very little of the way; I was near two days in going, such was the general state of our roads at that time." Quoted in Field, Edward. The Colonial Tavern. p. 281.

[3] Stage-coaches began to run regularly between Boston and the larger towns in eastern New England, especially along the coast, about 1760, and between Boston and New York some ten or twelve years later. Passengers and a small amount of personal baggage, and later, after the establishment of the Federal Post Office in 1782, the mails also were transported in this way. The establishment of these lines must have led to the improvement of the roads over which they passed and later they probably stimulated the building of turnpikes. Otherwise they had little effect upon internal trade.

An instance of the connection between the rise of the stage-coach business and the building of turnpike roads is found in the case of Captain Pease, a pioneer stage-coach driver and owner, who began a line from Boston to Hartford in 1783. Of him a historian of Shrewsbury, Mass., writes: "His long career as a stage driver gave him abundant cause to realize the bad state of the roads and the necessity for better ones. After long and earnest efforts he procured from the Government the first charter granted in the State for a turnpike, and it was laid out in 1808 from Boston to Worcester through South Shrewsbury . . . He lived to see it completed and to see the benefit it was to the public." Ward, Elizabeth. Old Times in Shrewsbury. New York. 1892. p. 55.

The Building of Turnpike Roads.

Dissatisfaction with the existing condition of the highways, and with the administrative system outlined above, led in the years 1790–1810 to the building of turnpike roads by individuals incorporated into associations by state charters. The old roads needed repairing; new roads were needed in the newly settled communities in western Connecticut and Massachusetts. The older towns, with the antipathy to paying taxes which had become traditional, were unwilling to burden themselves with the expense of putting the roads into good condition; the new towns were unable.[2] Hence they readily adopted the turnpike scheme as a means of getting better roads without resorting to taxation. In reality they were but reviving a medieval practice in public finance, substituting a fee for a tax. That is, they restored the principle of laying the burden of an expense which was or should have been incurred for the benefit of the whole community, upon those particular individuals in the community who benefited most by it. The states turned over to the new companies certain stretches of the highways to be improved and, to reimburse them for this expense, granted them the privilege for a term of years of collecting tolls from live stock, vehicles and pedestrians at toll-gates. The charters did not specify with any great exactness what sort of a road should be constructed, but were very specific as to the number and location of the toll-gates and the tolls that should be charged.

It seemed to be a splendid scheme from all points of view. The community would get improved roads at the expense of trifling fees paid by the users, and when after a term of years the gates had been abolished the roads would still be there, and presumably the community would then find itself able to maintain them. The incorporators would, in the meanwhile, have invested their capital profitably. So attractive did this plan seem that within a few years after the first companies were chartered, agitation for turnpike building began in almost every town. In the years 1803–1807, fifty companies were chartered in Connecticut, sixty in Massachusetts and nine in Rhode Island.[1] Before 1810 there had been 180 companies organized in New England, of which 26 were in Vermont and 20 in New Hampshire.[2]

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[1] See Felt, Joseph. History of Ipswich, Essex and Hamilton (Mass.) Cambridge, 1834. p. 32. Miss Larned tells of the introduction of these novel vehicles in Windham, Conn., in 1809. See also Wood, S. G. Taverns and Turnpikes of Blanford. Published by the author. 1908. pp. 259–261.

[2] See Miller, Edward, and Wells, Frederic P. History of Ryegate, Vermont. St. Johnsbury (Vermont). 1913. p. 148.

The Effect of Turnpike Roads on Inland Trade.

The turnpike companies on the whole, however, must be regarded as a failure to solve the transportation problem. In the first place, capital was not readily forthcoming for the new ventures and many of them were unable to begin construction and so forfeited their charters. Others began work but were unable to finish and their charters were renewed from time to time until they, too, finally became defunct. Many companies were organized by unscrupulous promoters, who hoped to make money out of the speculative mania which had arisen.[3] Nor were the roads which were in fact constructed under this system any great improvement over those which had formerly existed. In new districts where the only roads had been winding cartpaths through the woods, the turnpike companies did bring a real benefit, performing tasks which the sparsely settled communities would not have been able adequately to perform. But in the older towns the best that they were able to accomplish seems to have been a straightening of the roads between the larger towns. One of the old turnpike roads can even now be recognized by the direct manner in which it proceeds to its goal, uphill and down. This straightening, which was almost always accomplished at the expense of steeper grades, was not undertaken for the sake of cheapening transportation. Those engaged in carting heavy loads would have much preferred the older winding ways. But for the turnpike companies the straighter road was more profitable, because shorter. The expenditure of capital was but little greater per mile on a hilly than on a level road. The work consisted principally in clearing away stones and trees, building bridges and culverts, and digging ditches at either side of the road. The material thus secured was thrown into the middle of the road to make a crowned surface;

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[1] The figures for Connecticut are from Gallatin's Report on Roads and Canals, p. 55; for Massachusetts from Private and Special Statutes of Mass., Vols. II. and III.; for Rhode Island from Index to Acts and Resolves (Rhode Island). 1758–1850.

[2] Macmaster, History of U. S. III. 463.

[3] Kendall, Travels, I. 97, explains the frequency of turnpike companies in Middlesex County, Conn., on this ground.

thus, it was hoped, drainage would be provided for. This hope was bound to be disappointed, however, as can be proven by observation of roads in outlying country districts in New England today where similar practices are followed. In none of these early turnpikes, with the exception of a few between Boston and the coast towns of Massachusetts, was any other surfacing material used besides the natural soil of the region through which they passed.[1]

In the light of such evidence as is available, it seems impossible to ascribe to the turnpike movement in the years before 1810 any significant improvement in the methods of land transportation in southern New England, or any considerable reduction in the cost of land carriage. It was still prohibitorily expensive to move bulky commodities for any distance beyond the borders of the inland town. For many of the articles of farm production a distance of from ten to twenty miles was the limit of profitable transportation;[2] beyond this limit a few products such as cheese,[3] butter, potash, maple sugar, live stock, and, in some cases, salted beef and pork, could be carried; but even in these cases the expense of carriage absorbed a large share of the profit gained.

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[1] The turnpikes in Massachusetts were, on the whole, better constructed than those in Connecticut. Exceptionally good roads were those leading from Boston to Salem, Newburyport and Providence. These were surfaced with gravel, or with crushed stone, and cost to construct from $3,000 to $14,000 per mile. In Connecticut there were in 1807, 770 miles of the ordinary type of turnpike road, costing on the average from $500 to $1,000 per mile. The most expensive turnpike in this state was that from Hartford to New Haven, a distance of 35 miles, costing, including sums spent in purchasing land, $2,280 per mile. Gallatin, Report on Roads and Canals, pp. 55–56.

[2] This estimate is based on bits of scattered evidence, such as the following statement of the Rev. Samuel Goodrich in his Statistical Account of Ridgefield in the County of Fairfield (Conn.): "Potatoes are very much used and increased attempts are making to raise them for the market, but the distance from the market is so great that it is not expected the practice will be general." The distance referred to as "too great" was fourteen miles, to Norwalk. MS. in library of the Connecticut Historical Society, Hartford, Conn. In a letter from Robert Fulton contained in Gallatin's Report on Roads and Canals, there are various estimates of the cost of transportation of various commodities on the best turnpikes. These estimates vary from 10 to 30 cents per ton mile. At this rate wood could not bear the cost of transport over twenty miles. Op. cit., pp. 111, 116–117. See also Macmaster, History of U. S., III. 464.

[3] Cheese at this time sold at $160 a ton and butter at twice that price. See Statistical Account of Litchfield, Conn., p. 122.

The Insignificance of Internal Trade.

From this survey of the conditions of internal trade we are brought to the conclusion that the opportunities to supply the markets which existed at this time, both in the commercial towns and outside New England, must have been restricted to a small proportion of the towns. The especially favored localities were, (1) a narrow strip of territory along the coast of these three states, (2) a strip of territory on both sides of the Connecticut River, (3) a few towns in Litchfield and Berkshire Counties in which cheese and other dairy products and wheat could be profitably grown, and (4) a few towns in the immediate vicinity of such ports as New Haven, Norwich, Providence and Boston.[1] Altogether these towns contained from one-fifth to one-fourth of the total population of these three states. This represents the maximum number to whom the market, such as it was, was at all accessible. The remaining portion of the agricultural population was almost entirely isolated from commercial relations with the outside world.

This fact of isolation more than any other condition or circumstance was effective in determining the economic life of the agricultural population in the inland towns of southern New England at this time. There were, it is true, many other features of the environment, in both its physical and institutional aspects, such as the soil and climate, the political and ecclesiastical systems, to which some of the most unique characteristics of the society may be ascribed. But in the background, working sometimes in harmony and sometimes in opposition to these other factors, was the predominant influence of commercial isolation.

With this chapter the analysis of the economic conditions of the life of the agricultural population is concluded. The main facts of the environment of the inland farmer are now before us. Our final task is to describe his efforts to adapt himself to that environment. In the two chapters following this process of adaptation will be outlined, first as regards the agricultural industry and then as regards the salient features of home and community life.

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[1] The trade of the coast and river towns has already been discussed (supra, Chapter III). References to the export of agricultural products from other regions will be found in the two chapters following.

CHAPTER V.

THE AGRICULTURAL INDUSTRY.

Although agriculture was the chief means whereby more than 90 per cent of the inhabitants of southern New England got their living, yet it was most inefficiently, and, to all appearances, carelessly conducted. Very little improvement had been made over the primitive methods employed by the earliest settlers. As soon as the pioneer stage had been passed and the clearing of the land had been accomplished, the colonists settled down to a routine husbandry, based largely on the knowledge and practices of English farmers of the early seventeenth century, but in many ways much less advanced than the agriculture of the motherland even at that early date. In the century and a half intervening between the settlement of New England and the opening of the nineteenth century, improvements of far-reaching significance had been introduced in English agriculture, through the work of Tull, Bakewell, Townshend, Coke, and Arthur Young. The knowledge of these changes had spread quickly to this side of the Atlantic,[1] and yet the bulk of the farmers had shown no disposition to adopt the new methods. On their poorly cultivated fields little fertilizer of any sort was used, their implements were rough and clumsy, live stock was neglected, and the same grains and vegetables were raised year after year with little attempt at a rotation of crops, until the land was exhausted.

Contemporary Criticism.

The apparent lack of intelligence, and of any progressive spirit, exhibited by the New England farmers drew severe comment from both native and foreign observers. General Warren of Massachusetts,[2] for example, writing in the American Museum in 1786, drew a sharp contrast between the methods prevailing at home and in

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[1] See infra, pp. 346–347.

[2] The author of this letter was probably James Warren, 1726–1808, of Plymouth, Mass. He succeeded General Joseph Warren as president of the Provincial Congress, after the latter's death at Bunker Hill, fought through the Revolution, and was later made a major-general of militia. See Appleton's Encyclopedia of American Biography, VI. 364.

England. He says: "A man in England that farms 150 acres, would think a stock of £500 sterling necessary; three teams would be employed; four or five ploughs; barrows, wagons, carts, &c. in proportion; 70 to 80 acres tilled; 8 or 10 labourers at work; 800 to 1000 loads of manure annually collected; and perhaps three times more cattle, sheep, and hogs kept, than are kept here on a farm that is naturally as good. A man in America that farms 150 acres, would think a stock of £150 sufficient. One miserable team; a paltry plough, and everything in the same proportion; three acres of Indian corn, which require all the manure he has; as many acres of half-starved English grain from a half-cultivated soil, with a spot of potatoes, and a small yard of turneps, complete the round of his tillage, and the whole is conducted, perhaps, by a man and a boy, and performed in half their time; no manure but dung from the barn, which, if the heaps are not exposed to be washed away by the winter rains, may amount to 15 or 20 loads; and if they are so exposed to much less, without any regret to the farmer. All the rest of the farm is allotted for feeding a small stock. A large space must be mowed for a little hay for winter; and a large range for a little feed in summer. Pastures are never manured, and mowing lands seldom; . . . ."[1]

The author of American Husbandry wrote: "And the mention of cattle leads me to observe, that most of the farmers in this country are, in whatever concerns cattle, the most negligent ignorant set of men in the world . . . . Horses are in general, even valuable ones, worked hard and starved: . . . . This bad treatment extends to draft oxen; to their cows, sheep and swine; only in a different manner as may be supposed . . . .

I must, in the next place take notice of their tillage, as being weakly and insufficiently given; worse ploughing is no where to be seen, yet the farmers get tolerable crops; this is owing, particularly in new settlements, to the looseness and fertility of old woodlands which, with very bad tillage, will yield excellent crops; a circumstance the rest of the province is too apt to be guided by, for seeing the effects, they are apt to suppose the same treatment will do on land long since broken up, which is far from being the case.[2] Thus, in most parts of the province, is found shallow and unlevel furrows, which rather scratch than turn the land; and of this bad tillage the farmers are very sparing, rarely giving two ploughings if they think the crop will do with one; the consequence of which is their products being seldom near so great as they would be under a different management."[1]

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[1] Vol. II. No. II. August, 1787. p. 347.

[2] For a further consideration of the effect of the frontier, a nearby region of new, cheap land, see infra pp. 350–352.

Although usually resentful of foreign criticisms, Dwight is forced to admit that "the husbandry of New England is far inferior to that of Great Britain." He adds: "The principal defects in our husbandry, so far as I am able to judge, are a deficiency in the quantity of labour necessary to prepare the ground for seed, insufficient manuring, the want of a good rotation of crops, and slovenliness in clearing the ground. The soil is not sufficiently pulverized nor sufficiently manured. We are generally ignorant of what crops will best succeed each other, and our fields are covered with a rank growth of weeds."[2]

Farm Management in 1800.

Postponing for the present an examination of the reasons for this inefficiency in the fundamental occupation, let us examine the routine operations of the farmer in the inland communities, in order to determine as nearly as possible how far these criticisms were justified.

Size of Farms.

The 100 to 200 acres which composed a typical inland farm[3] were divided into three roughly equal tracts, one-third being woodland, including wasteland, one-third pasturage, and the remainder divided between mowing lands and cultivated fields in varying proportions. The land under tillage, however, hardly ever exceeded ten or a dozen acres, except in the neighborhood of such commercial towns as would furnish a market.[1] These fields were separated originally by rail fences or stone walls. In places where timber was beginning to be scarce the latter material was most generally used. When the farmer and his sons piled up these monuments of laborious toil they were accomplishing a double purpose, not only marking off the boundaries of their fields, but ridding their land of a great hindrance to cultivation as well.

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[1] Op. cit., I. pp. 80–81.

[2] Travels, I. 81, 82.

[3] On the matter of the prevailing size of farms there is an abundance of evidence. See Dickinson, Geographical and Statistical View, p. 7; Livingston, Robert R., American Agriculture. Article in the Edinburgh Encyclopedia. First American edition. 18 vols. Philadelphia. 1832. Vol. I. pp. 332–341. The facts in this article apply particularly to the Northern and Eastern states; many of them are taken without credit from Dickinson's work. This article was written shortly before the author's death in 1813. See De Peyster, Frederick. Biographical Sketch. New York. 1876. p. 13. The advertisements of farms for sale in the columns of the Massachusetts Spy (Worcester) in the year 1807–1808 show variations in acreage from 50 to 275 acres. But of the total of 24 farms advertised, only four had below 100 acres; 18 were between 100 and 200 acres, and only two had more than 200 acres.

The Importance of Indian Corn.

Indian corn and rye were the staple grains cultivated on every inland farm. The first might have been called the cornerstone of New England agriculture. Next to grass its yield was more valuable than that of any other crop. Dickinson says of this crop: "Indian corn may justly be considered as our principal grain, and the most valuable in the whole circle of husbandry. Its increase, compared with that of any other grain, is in a greater degree independent of the season, and governed more by the attention and care of the cultivator. It is mixed in the proportion of one-third, with rye, and constitutes the common bread of the inhabitants. The beef, pork, and poultry, fattened with it, are greatly superior to such as are fed on any other grain. Besides the crop, the average of which is about twenty-eight bushels per acre, the forage it affords is very considerable, every part of the stem and husk being applicable to the feeding of cattle."[2] Dwight says that this crop is "nearly as valuable to this country as all other kinds of corn united, and yields a crop much more certain, and much more extensively useful than any other."[3] Besides its advantage of hardiness which made it surely dependable,[1] and its general utility to man and beast, this crop was peculiarly adapted to a region in which labor was expensive. The system of planting in hills at the corners of a four or five-foot square, which the colonists had learned from the Indians, rendered cultivation by cross-plowing feasible and so reduced the necessity of hand hoeing.[2] This is probably the reason why this crop was given more careful cultivation than any other. Besides rye which, combined with Indian corn, furnished the flour for bread, oats, barley, and buckwheat were regularly sown in small amounts. Both the oats and barley were recognized to be poor crops,[3] but still they were necessary, and therefore, under the self-sufficing system of agriculture, they had to be grown. The buckwheat was a useful crop in many ways. Its value in cleaning the fields of weeds was already recognized and it was also occasionally ploughed under to serve as a "green" fertilizer. The blossoms furnished food for the farmer's bees and the grain was used as a food for poultry.[4]

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[1] According to the answers received by the Massachusetts Agricultural Society to their questionnaire of 1806, the farms in Brookfield, an exceptionally prosperous inland town in Worcester County, were divided as follows: Pasture, 33 acres; mowing, 20 acres; tillage, 6 to 7 acres; orchards, 3 to 4 acres; and woodland, 33 acres. A considerable contrast is seen in the case of Brooklyn (now called Brookline), a town adjacent to Boston, which benefited by the market in that place. Here we find a typical farm with 100 acres, of which 12 were in woodland, 20 in pasture, and 68 in mowing, tillage, and orchards. Papers, Vol. II., 1807. pp. 11, 12.

[2] Geographical and Statistical View, pp. 8–9.

[3] Travels, II. 62. In another passage, II. 294, Dwight catalogues and describes ten varieties of maize grown in New England. Other writers who recognized the importance of maize in the agricultural economy of New England were the author of American Husbandry, who calls it "the grand product of the country on which the inhabitants principally feed," I. 50, and Livingston, American Agriculture, pp. 334–335.

Why the Wheat Crop Failed.

Wheat could not be successfully grown except in a few favored regions in New England, such as the valley of the Connecticut River and the western portions of Massachusetts and Connecticut, in Berkshire and Litchfield Counties.[5] Other grains, as we shall see, yielded poor enough results, but the results of wheat cultivation were so disappointing that it was early abandoned in most regions altogether. Besides suffering from the inroads of the Canada thistle and the Hessian fly, it was repeatedly damaged by a sort of fungus growth, known to the writers of that time as blast, rust or mildew. Many attempts were made to explain this last phenomenon, which, as the investigations of the Massachusetts Society for Promoting Agriculture later proved, was really caused by the use of unselected, infected seed.[1] Dwight went to work systematically to fathom the mystery and after examining and discarding such alleged causes as the character of the soil, the climate, and the "noxious effluvia" from barberry bushes, he concludes that the damage must proceed from the use of stable manure as a fertilizer. This, he believed, forced the growth of the plant too rapidly in its early stages.[2] Harriott, the English traveler, came much nearer to a correct solution of the problem. He wrote: "In some of the farther inland parts, wheat is raised; but on the sea-coast, it has never been cultivated with much success, being subject to blasts. Various reasons are assigned for this: some suppose these blasts to be occasioned by the saline vapours from the sea; but I can not agree to this, well knowing that many of the best wheats that are grown in England in quantity and quality, are from sea-marshes and lands adjoining the sea. Others attribute it to the vicinity of Barbary-bushes of the truth of which I can not speak. But the principal cause appeared to me the poverty and sandy nature of soil in general, together with exceedingly bad management."[3]

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[1] In the answers received from the farmers in reply to its questions, the Massachusetts Society for Promoting Agriculture printed the following: "From Worcester, it is remarked, that the crop of Indian corn is the most uniform, and the one on which the farmer can most securely rely; and it is alleged, that it is the only one well cultivated in our country, and that for all these and other reasons it is thought the most useful." Papers, II. 18.

[2] See Livingston, American Agriculture, p. 335. He says further: "Ten acres of corn are hoed with less expense, than one of beans or turnips, . . ." The practice of sowing pumpkins in among the rows of corn, to which this writer in another passage refers, would have interfered somewhat with the cultivation of the corn.

[3] Of oats and barley the author of Notes on Farming says, p. 18: "I have not mentioned oats, because in this country it is a contemptible crop and scarce worth raising; barley being far better even for the feed of horses." The author of this thirty-eight page pamphlet, printed anonymously in New York in 1787, was Hon. Charles Thompson, a member of the first Continental Congress and of the Philadelphia Society for Promoting Agriculture.

[4] See Livingston, American Agriculture, p. 334.

[5] Salisbury, in Litchfield County, was especially noted for the successful cultivation of this grain. Pease and Niles, Gazetteer, p. 258.

The Lack of Root Crops.

One of the greatest defects in the system of husbandry practiced in New England was the lack of root crops. Such crops, especially the turnip, were being extensively used in England as a winter food for cattle, making possible the keeping of more animals and in better condition, besides securing for the farmer a valuable addition to his supply of stable manure. The potato was, to be sure, cultivated to some extent, and principally as a food for cattle. Although indigenous in America, it seems not to have been well known until the early part of the eighteenth century.[1] By the end of the century almost every farmer cultivated from one to four or five acres of potatoes, not in a separate field but along the borders of the corn or other grain fields. Occasionally we find turnips and carrots mentioned[2] but their cultivation had not become at all general. A cheaper substitute for root crops which was used to some extent for winter fodder was the pumpkin. Planted in the hills of corn, it required no extra land to be cultivated and grew abundantly without attention. In the fall after the corn had been cut and shocked the pumpkins were easily gathered. Although they could not be preserved as long as the root crops, yet while they lasted they furnished a fairly good substitute. Hay remained throughout all this period, however, the chief winter fodder for all sorts of live stock.[3]

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[1] Massachusetts Agricultural Repository and Journal. Published by the Massachusetts Society for Promoting Agriculture. 10 vols. Boston, 1793–1832. Vol. V., pp. 132–150. The first two volumes of this collection include the contributions to the Society, published as annual papers. Referred to in later notes as Mass. Agric. Soc. Papers.

[2] Travels, II. 322–329. Kittredge, The Old Farmer and His Almanack, pp. 322–332, has a chapter entitled Barberries and Wheat, in which he discusses the difficulties encountered by the farmers of the period in attempting to grow this grain.

[3] Struggles through Life, II. 32–33.

Flax was not a crop especially suited to New England at this time, since it required an amount of labor and fertilization inconsistent with the prevailing extensive system of cultivation. Yet flax was necessary for the production of the homespun linen and tow cloth and hence a small field, probably only a fraction of an acre, was regularly sown. A part of the flax was allowed to ripen and although this practice made the fiber less suitable for textiles, yet from the seed thus secured linseed oil was obtained. This, as we have seen, was in some regions a commercial product.[4]

The smaller vegetables, such as peas, beans, onions,[5] etc., were not given much attention except in the few favored regions in the neighborhood of commercial towns, where a market for such produce was at hand.[1] Gardening was much too intensive a process for the farmer at that time. Kitchen vegetables were therefore often lacking on his table, unless the women of the household could spare time from their multifarious other occupations to plant and care for a garden.[2] The farmer had, however, learned the soothing effects of nicotine and consequently often grew a small amount of tobacco. Occasional instances of its export are found even at this early date.[3]

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[1] Belknap, History of New Hampshire, II. 37, credits the Scotch-Irish families who settled Londonderry, New Hampshire, in 1719 with the re-introduction of this plant from Europe.

[2] As in Goodrich's Statistical Account of Ridgefield, pp. 5–6.

[3] The best contemporary discussion of the methods of planting and preserving pumpkins is found in Notes on Farming, pp. 20–21. Colonel Taylor, of Virginia, considered pumpkins a much superior crop to either turnips or potatoes, in spite of the advocacy of the latter in the English treatises with which he was familiar. The results of his experiments he published in a series of essays entitled Arator. (3 ed. Baltimore, 1817), pp. 115 ff. The bulk of this work was written before 1810.

[4] Mass. Agric. Soc. Papers, II. 1807, 41–42. In Fairfield County, Connecticut, the export of flaxseed had assumed some importance, the surplus over consumption amounting to about 20,000 bushels a year. The result of this outlet was a considerable specialization in the crop. Dwight says: "A few years since (ca. 1800) more flax was raised here than in the whole of New England beside." Travels, III. 499–500.

[5] The two towns which exported onions to any extent were Wethersfield, Connecticut, and Barnstable, Massachusetts. Pease and Niles, Gazetteer, p. 9; Kendall, Travels, II. 129.

A few unsuccessful attempts at hemp-growing had been made in the Connecticut Valley. Although there was a considerable demand for this product at the shipyards in the commercial towns, yet such intensive cultivation was required, and so much disagreeable labor in preparing the fiber for market, that the domestic supply was greatly inadequate.[4] The breweries in Boston offered a market for hops, which was supplied by the farmers in the nearby towns.[5] Hops were also grown in small amounts by some farmers for the production of home-brewed beer. None of these smaller crops had the importance to the self-sufficient farmer, nor occupied as much of his land or attention, as the grain and grass crops. New England was at this time a region in which grazing was of more importance than the cultivation of fields, and hence the latter operations were subsidiary to the former.

The Rotation of Crops.

Very little progress had been made towards developing any systematic rotation of these crops. The simplest plan was a three-year course, alternating grain, grass and fallow, a system reminding one of the three-field agriculture of the Middle Ages. The first crop in this case was usually maize, followed by rye, oats or barley. It was the practice to sow one of the latter grains in the fall after the maize crop had ripened. After this second crop had been harvested, the ground was laid down to grass, or more regularly left to "sow itself;" which meant simply that it was allowed to grow up to weeds, producing the much-condemned weed-fallow. This primitive practice was varied by the extension of the alternating crops over a period of several years each, and also by the occasional interjection of other crops.[1] The Massachusetts Agricultural Society summarized the answers from its correspondents on this subject as follows: "The answers from our other correspondents agree in stating the general succession of crops to be Indian corn and potatoes for one or two years; then either rye, oats or spring wheat; sometimes flax and when the land is laid down to grass, it is usually with barley. It may be inferred from the replies that the land is usually broken up after being in grass three or four years; and that it is usually ploughed about three years, and then laid down as above stated."[2] There had been practically no improvement along this line since the Revolution, for in 1775 the author of American Husbandry had written: "They (the farmers of New England) sow large quantities of maize, some wheat, barley, oats, buckwheat, pease, and beans, turneps, and clover: hemp and flax in small parcels. And these they throw after one another, with variations, so as to keep the land, as well as their ideas permit, from being quite exhausted; which they effect by the intervention of a ploughed summer fallow sometimes. When the land has borne corn for several years, till it threatens to yield no more, then they sow clover among the last crop, and leave it as a meadow for some years to recover itself. But all this system proceeds too much on the plan of the worst farmers of Great Britain, to get corn (*i.e.*, grain) from their fields as long as ever they will bear it."[3] In general we may say that some farmers were making a conscious but unsystematized effort to secure a more beneficial alternation of crops, but because of the limitations of their knowledge on the subject[1] and because of the necessity of getting certain staples, such as corn, rye, grass and flax, under any conditions, they had made practically no progress along this line.

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[1] Dickinson, for instance, speaks of the cultivation of beans to be sold for "ship stores." Geographical and Statistical View, p. 9.

[2] The editor of the Old Farmer's Almanack occasionally encouraged his readers to pay more attention to their kitchen gardens and to introduce vegetables into the bare menu of salt beef, turnip and stewed pumpkin. See Kittredge, The Old Farmer and His Almanack, pp. 84–85. Dwight gives a long list of vegetables grown in New England gardens, but fails to tell how many of them were regularly grown in any one garden. Travels, I. 18–20.

[3] See Lees, John. Journal. New York. 1768. Also Memorial History of Hartford County, Conn. (Trumbull, J. H., ed.) 2 vols. Boston. 1886. Vol. I. p. 215. Also article, Tobacco, by Shamel, A. D., in Cyclopedia of American Agriculture (Bailey, L. H., ed.), 4 vols. New York. 1910. Vol. II. p. 641.

[4] Dickinson tells of experiments with this crop in Deerfield, Mass. Geographical and Statistical View, p. 10. See also American Husbandry, I. 54.

[5] Dwight found considerable hop-growing in Tewskbury, Mass., Travels, II. 189.

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[1] According to the Rev. Mr. Goodrich, the rotation of crops practiced in Ridgefield was: 1st year, buckwheat or rye; 2nd year, Indian corn; 3rd year, flax or oats, followed by rye sown in the fall; 4th year, pasture. After remaining in pasture a few years the land was broken up and the same routine was repeated. Statistical Account, p. 6.

[2] Papers, II. 28.

[3] Op. cit., pp. 75–76. Clover had been introduced in some parts, but not to any great extent, before 1800. It was valued rather as making good hay than for any appreciation of its service in recuperating the soil. Deane wrote in 1790:

The Neglect of Manure.

There are two means of preventing soil exhaustion and of restoring the fertility of mismanaged soils; one is by a system of scientific rotation of crops and the other is by the regular and liberal application of fertilizers. As we have seen, the farmers at this period had very little knowledge of the former method, even of an empirical nature. Although we could not expect them to understand the principles of soil chemistry, the beneficial effect of common fertilizers was so obviously apparent that their neglect of this method of enriching their soil seems at first glance astonishing. The barnyard and stable manure would, if carefully collected and preserved, have furnished a considerable supply[2] of first-class fertilizing material, but this resource was uniformly neglected. The cattle and horses were turned out to pasture early in the summer and often were not put into stables again, even for over night, until late in the fall.[3] Even the small amount of manure which accumu-

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"Some think clover is so far from needing any manure, that it will recruit lands which are worn out. That it will do it more than other grasses, I cannot yet see any reason to believe. It will bear no crop worth mowing on lands which are quite exhausted. But it is probable, it may produce good crops on lands which are much impoverished near the surface, by bearing plants with short or horizontal roots; because clover sends its main roots to a great depth. And while a field lies several years in clover, the soil near the surface may be considerably recruited. But whether the land on the whole will be in better heart, after several heavy crops of clover are taken from it, and no manure laid on, seems rather doubtful." Deane, Samuel, A. M., The New England Farmer. 1 ed. Worcester. 1790. p. 60.

[1] The state of knowledge on this subject is apparent from the following: "There seems to be a general opinion that potatoes are a beneficial crop, and an universal sentiment that flax is a pernicious one. Another opinion is equally universal, that a succession of crops is absolutely essential to good cultivation, though there does not appear to have been any accurate experiments to ascertain the best order, or the duration of this rotation." Mass. Agric. Soc. Papers. II. 1807. 28.

[2] In the Papers of the Massachusetts Agricultural Society for 1807 it was estimated that the live stock ordinarily kept on a 100-acre farm would furnish about 50 cart loads of dung. pp. 42–45.

[3] General Warren wrote: "The common practice, in this country, is, in winter, when they (the cattle) are turned out of the barn, to take no further care of

lated during the winter was imperfectly protected from the weather and consequently a large proportion of it was wasted.[1]

An artificial manure, or commercial fertilizer, as it would be called nowadays, known as gypsum or Plaster of Paris, had been introduced in a few towns as early as 1800. Like other calcareous substances, it did not furnish a lacking element of plant food, yet its action was beneficial in counteracting the acidity of certain soils, and it may have also aided in retaining moisture in dry soils. The gypsum used in New England was quarried in Nova Scotia and transported hither by water. Then it had to be ground, either in plaster mills erected for that purpose, or more often, in grist mills. The cost of this process plus that of transportation and of quarrying, made this form of fertilizer so expensive that only a few farmers could afford to use it.[2] Consequently its use was confined to a few towns in sections from which crops could be exported, such as the wheat-growing regions of the western counties and in the Connecticut Valley.[3]

On the seacoast two fertilizers were easily accessible, fish and seaweed. Along the Connecticut shore of Long Island Sound, whitefish were caught in great quantities and applied to the land at the

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them for the day; they are suffered to range at large in summer; it is not uncommon to bring them up in the evening, and let them lie till morning in the roads; the first rains wash the roads clear for the traveller, without any injury to the farmer, who would not have taken the trouble to have cleaned them for any other purpose; . . . ." Letter in American Museum, II. 347.

[1] European travelers could not understand why the New England farmers and those of the Eastern states in general should be so indifferent to this means of fertilization. Harriott relates, Struggles through Life, II. 216, that on the farm which he purchased on Long Island there was "some hundred loads of manure which had been accumulating for several years, to the great damage of the buildings." This accumulation was looked upon by his neighbors as an encumbrance, merely, and the former owner advised him to move his barn, as this would be an easier way out of the difficulty than moving the manure. A similar state of affairs was described by La Rochefoucauld in Lebanon, Connecticut. Travels, I. 516.

[2] Livingston, American Agriculture, p. 338, estimated the cost to the farmer at 50 cents a bushel. When we consider that the purchasing power of money was very considerably higher in those days, this price, which is about that which a farmer pays nowadays for his commercial fertilizers, seems extremely high.

[3] Kendall found gypsum costing $20 a ton in use by the farmers in Sharon, in Litchfield County. Travels, I. 231. Dwight, in the course of his travels, found gypsum in use in nine towns in New England. It is significant that eight of these towns are in the Connecticut Valley. The ninth, Plainfield, Connecticut, profited by the outlet for surplus products furnished by the port of Norwich.

rate of 10,000 to 12,000 per acre.[1] Seaweed, or rock-weed as it was called, was easily collected and served the same purpose to a less degree. Both at the shore and inland a variety of other fertilizing agents was used, such as marl, potash and lime, but only sporadically, according to the enterprise of particular farmers and the accessibility of the material.

The prevailing neglect of fertilizers, to which the occasional use of gypsum and white-fish are merely exceptions, illustrates not so much the ignorance of the typical farmer, as the inhibitory effect of the lack of a market on all progress in the science of agriculture. Of course the farmers of that day did not understand why spreading the dung of their cattle on their fields increased the yield of their crops, but they knew very well that such was in fact the result. Even if they had had more knowledge, it is not likely that they would have modified their wasteful practice. For carting and spreading manure entailed labor, which meant expense either of money or of their own physical effort. And from what source was that expense to be repaid? Not, certainly, from the sale of crops, for without a market that was impossible. The old practices resulted in crops sufficient to feed the farmer and his family. Why should he exert himself to produce a surplus? The only return he could expect would be a sort of psychological income, a satisfaction in seeing his fields yielding more than those of his neighbors. Such satisfaction was a quite sufficient stimulus for the gentleman farmer of the commercial towns, who experimented along all sorts of lines, regardless of expense, but for the self-sufficient farmer it was a psychological luxury in which he did not feel he could afford to indulge. The farmers of Litchfield and Berkshire and of the Connecticut Valley had no more knowledge of the scientific principles involved in the action of gypsum as a fertilizer than had their contemporaries in the hills of Worcester or Tolland, but they had learned somehow that gypsum produced bigger crops. They wanted bigger crops because they had a market. Hence they were willing to invest their money and labor and make the experiment. Hence their progress in the science of agriculture.

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[1] Dwight noted the use of white-fish in Branford, Killingworth, and Guilford. Of the latter town he remarks: "The soil of East Guilford is naturally less rich than that on which the town is built; but, being extensively manured with white-fish, yields abundant crops. These fish are sometimes laid in furrows, and covered with the plough. Sometimes they are laid singly on the hills of maize and covered with the hoe. At other times they are collected in heaps, formed with other materials into a compost, carted upon the ground, and spread in the same manner, as manure from the stable. A single net has taken 200,000 in a day. They are sold for a dollar a thousand, and are said to affect the soil advantageously for a considerable length of time. The people of East Guilford are not a little indebted to them for their present prosperity."

This prosperity, however, had its drawbacks. Dwight continues with conscientious adherence to detail: "One very disagreeable circumstance attends this mode of husbandry. At the season, when the white-fish are caught in the greatest quantities, an almost intolerable foetor fills the surrounding atmosphere, and however use may have reconciled it to the senses of the inhabitants, it is extremely disgusting to a traveller." Travels, II. 491–492.

The Farm Equipment—Buildings, Tools and Implements.

It was this lack of a market which explains to a large extent the small investment of capital in agriculture at this time, either in permanent improvements, such as drains and buildings, or in tools and implements. A house and barn were necessary and these were in general conveniently and substantially built. The latter had a threshing floor in the middle and stables for horses and cows on either side. Some of the hay was mowed away above the stables and the remainder was stacked near the barn in sheds, open at the sides and covered with a thatched or shingled roof. A corn-crib was always in evidence, set up on stilts as now, as a protection against mice and dampness. Of the tools and implements used on the farm we shall have occasion to speak in another connection.[1] They were few and ill-contrived. One writer says that the farmer of this period could have carried them all, except the cart and harrow, upon his back.[2] They included a plough, a hoe, a pitchfork, a manure-fork and a shovel, all of which were clumsily constructed of wood, often by the farmer himself, and plated with strips of sheet iron, perhaps by the local blacksmith; a flail for threshing grain and a a fan and riddle-sieve for winnowing. The practice of treading out the grain from the straw by driving cattle over it, which had persisted since the days of the ancient Israelites, was still to be found in some of the Middle states, but seems to have been superseded in New England.[3] The sickle, the most ancient of harvesting implements, was still used to some extent in reaping wheat; for cutting other grains and grass, the scythe and cradle were used.[1]

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[1] See infra, pp. 364–365.

[2] Flint, Charles Louis. Progress in Agriculture. In Eighty Years' Progress of the United States. Hartford. 1867. p. 24.

[3] See American Museum, V. 379; and Deane, New England Farmer, p. 283. A day's work with the flail yielded from four to six bushels of wheat and from six to twelve bushels of barley, according to the size of the grains. Ibid. Indian corn was sometimes threshed with a flail but a more efficient method was to scrape the grains from the cob by rubbing the ear across the edge of a spade. Mass. Agric. Soc. Papers, II. 1807, 25–26.

For the all-important business of ploughing the farmer was but poorly equipped. Flint has given us a description of two of the types of ploughs most frequently used at this time. He says: "The Carey plough had a clumsy wrought-iron share, a land-side and standard made of wood, a wooden mould-board, often plated over in a rough manner with pieces of old saw-plates, tin or sheet-iron. The handles were upright, and were held by two pins; a powerful man was required to hold it, and double the strength of team now commonly used in doing the same kind of work. The 'bar-side plough' or the 'bull plough' was also used to some extent. A flat bar formed the land-side, and a big clump of iron, shaped a little like the half of a lance head, served as a point, into the upper part of which a kind of coulter was fastened. The mould-board was wooden and fitted to the irons in the most bungling manner. The action might be illustrated by holding a sharp-pointed shovel back up, and thrusting it through the ground."[2] With such unwieldly instruments, two men or a man and a boy, using three horses or two or three yoke of oxen, could turn over in a superficial manner the soil of one or two acres in a day.[3] Some attempts had been made to improve this implement; a cast-iron plough had been invented in 1797 in which the mold-board and land-side were cast in one piece,[4] but the mass of the farmers were ignorant of these improvements. The iron plough was even opposed because of the fear that it would poison the earth.

Harrows were used to further pulverize the soil. These had at times iron, but probably more usually wooden teeth. Of the latter Deane says: " . . . they are of so little advantage to the land, unless it be merely for covering seeds, that they may be considered as unfit to be used at all. The treading of the cattle that draw them, will harden the soil more, perhaps, than these harrows will soften it."[5] All the transportation of crops, manure, timber and stone was done, except when there was snow on the ground, by means of ox-carts, ponderous two-wheeled vehicles, constructed almost entirely of wood. The carriage of goods for any distance was, if possible, postponed until winter when sledges or sleighs could be used.

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[1] The inefficiency of these tools appears in the following figures: Using a sickle, a man could cut one acre of wheat in a day; with a cradle he could cut four acres of oats or barley, and with a scythe, one acre of green grass. Deane, New England Farmer, p. 380.

[2] Eighty Years' Progress, pp. 27–28. See also American Husbandry, I. 81–82.

[3] American Museum, V. 379–380.

[4] By Charles Newbold, of New Jersey. See Carver, T. N., Historical Sketch of American Agriculture in Bailey's Cyclopedia of American Agriculture. IV. 56.

[5] New England Farmer. (2 ed.) p. 142.

The Yield per Acre of Various Crops.

The best method of determining just how inefficient was the practice of husbandry outlined in the foregoing paragraphs, would seem to be an examination of the yield of the various crops cultivated. There are, of course, no government reports going back to those early days[1] nor are there any other official publications covering this period. There exists, however, a considerable mass of information on this point scattered through the various gazetteers and statistical accounts of towns and in the writings of travelers. This material refers to conditions in various parts of southern New England, in general between the years 1790–1810. The following figures have been compiled from a digest of such scattered information, making allowance for exceptional conditions in certain localities which would cause variations from the normal figures. Indian corn produced on an average 25 to 30 bushels per acre. Occasionally crops of as high as 40 or 50 bushels were recorded, in the Connecticut Valley, and, on the other hand, on sandy soil such as that of Cape Cod and of Nantucket the yield fell to 12 bushels per acre or less. Rye was considerably less prolific, averaging about 15 bushels per acre. This crop was curiously uniform over the entire area, hardly any cases being found where crops larger than this were harvested, and only occasionally did the yield fall to 12 or 10 bushels. Potatoes are credited with 100 to 150 bushels per acre, a figure which compares very favorably with those of the latest censuses,[2] but this is probably due to inaccuracy at the earlier date in estimating the crop, since, as we have seen, potatoes were rarely grown by themselves in fields of any considerable size. Barley produced about 20 bushels to the acre, and buckwheat from 15 to 20 bushels. The yield of wheat, in the limited areas in which it was cultivated, was miserably low, hardly ever rising above 15 bushels to the acre, and averaging between 10 and 15.[3]

[1] The census of 1840 was the first in which agricultural statistics were collected.

[2] In 1909 the yield for New England averaged 176.9 bushels per acre; in 1899 it was 130.3. U. S. Bureau of the Census. Thirteenth Census. 1910. Abstract. p. 399.

[3] For the best collation of figures for crop yields in any single work see Mass. Agric. Soc. Papers, II. 1807, 14–19.

The Apple Orchard.

Apples were the standard fruit of New England. As we have seen, every farm had an orchard of several acres, containing a hundred or more trees.[1] The abundant yield of these trees seems to have been used principally for making cider, the favorite beverage of all classes and persons.[2] Some was exported to the Southern states, either in its natural form or after being distilled into cider brandy, but the bulk of the product was stored away in the farmers' cellars for their own consumption. Apples were also preserved by slicing and drying for winter use in the household. In especially fruitful years there was still a surplus, which was fed to the cattle and swine. Other orchard fruits of less importance were pears, peaches, plums, cherries and quinces. The orchards suffered much from the lack of care. After the original planting, practically nothing was done to preserve the trees or increase their yield except to allow cattle to pasture among them and, very rarely, to plough between the trees. The result of this neglect was becoming apparent at the beginning of the century. The first growth of orchards in many towns was dying out and often the trees were so infested with worms that the value of their fruit was largely destroyed.[3]

The Management of Woodland.

Every farm had also its woodland, occupying perhaps one-third of its total area, and every farmer was to some extent a lumberman and forester. The importance of wood in the farm economy we have already noted. Houses and barns, tools and vehicles, furniture and utensils, were constructed of this material to a much greater extent than now. Besides this, the consumption of wood for fuel was enormous. The open fire-places demanded constant replenishing during the winter months and consequently the wood-pile formed an imposing eminence behind every farmhouse. In their wholesale and seemingly reckless destruction of timber in clearing the land, the settlers seem not to have anticipated the subsequent importance of this material to them.[1] As a result of their improvidence there seems to have been in 1810 little first-growth timber standing, except in the more lately settled counties of western Massachusetts and Connecticut.[2] And even in the management of such woodland as they had, the farmers of this period followed a bad system. The policy was to cut off close a certain tract every year, depending on the natural growth to replace it after a term of years. The better method, that of selecting certain trees over the whole extent of the woodland to be cut every year, was discarded because of the larger amount of labor which would have been necessary in gathering the wood. Ignorance of the better policy may also have been responsible.[3] The scarcity of wood,[4] which was inevitable, had begun to be felt, especially in the matter of fuel. In regions of naturally sparse forestation, as on Cape Cod, fire-wood was imported and experiments were being made with the use of peat as fuel.[5]

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[1] In the advertisements of farms for sale in the newspapers of the day great stress was laid on the capacity of the orchards as cider producers. For instance, a farm of 270 acres in Coventry, Connecticut, had an orchard capable of producing 60–100 barrels of cider annually. Windham Herald, January 11, 1811.

[2] As an instance of the popularity of this beverage Miss Earle relates that cider, diluted with water, was drunk by children when milk was scarce. It was also supplied in large amounts to college students. Home Life in Colonial Days. New York. 1898. pp. 148–149, 161–162. Charles Francis Adams writes: "Later, (*i.e.*, after the early years of colonial life) cider seems to have supplanted beer as the every-day and all-day beverage, and the quantity of it drunk by all classes down to a late period in this century was almost incredible. In the cellars of the more well-to-do houses a barrel of cider was always on tap, and pitchers of it were brought up at every meal, and in the morning and evening." Episodes. II. 686.

[3] Travelers commented on the poor condition of the orchards throughout southern New England. See Harriott, Struggles through Life, II. 34–35; Kendall, Travels, III. 35; Brissot de Warville, New Travels, p. 132.

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[1] The author of American Husbandry severely condemned this waste and seems to have anticipated to some extent the modern conservation movement in advocating legislative restraint. Op. cit., I. 84. See also Whitney, History of the County of Worcester, p. 249; and Belknap, History of New Hampshire, III. 26.

[2] Dickinson, Geographical and Statistical View, p. 9, describes the forests still existing in Massachusetts, ca. 1810.

[3] There seems to have been little agreement as to the time required for reforestation. See Dwight, Travels, I. 80; and Mass. Agric. Soc. Papers, II. 1807, 47.

[4] In a number of works this is given as the reason for the substitution of stone walls for rail fences. See Statistical Account of Litchfield, p. 92; Goodrich, Statistical Account of Ridgefield, p. 8.

[5] Joseph Felt wrote in 1834: "The first settlers thought no more of burning twenty or thirty cords of wood annually than we do of burning five. . . . Peat began to be used in some families about fifty years since . . . . It was made into coal sixty years past and used on the forges of blacksmiths." History of Ipswich, Essex and Hamilton. pp. 25–26. In his Observations on the Agriculture of the United States, William Strickland wrote that timber and wood had doubled in price in every part of New England within ten years. Strickland was an Englishman who spent a few months in this country as an agent of the British Board of Agriculture. He seems to have been diligent in his collection of facts, although his generalizations are colored by prejudice to some extent. The result of his work, a seventy-four page pamphlet, was published in London in 1801.

Meadows and Pastureland.

The New England region was by nature better fitted for grazing and pasturage than for agriculture in the strict sense of the word. Its soil, although of a good quality, was thin and the fields were much encumbered by stones and boulders, varying in size from small pebbles to huge rocks and ledges.[1] Hence the farmer's meadows and pasture lands tended to assume more importance than his tilled fields. The natural grass, which sprang up and grew abundantly as soon as the land was cleared, was of excellent quality.[2] On the uplands it furnished good pasturage and from the meadows, which were almost always watered by a small stream, fair crops of hay could be secured with the labor only of harvesting. Grass was also cut on the tilled lands in the years in which they were lying fallow. Occasionally these fields were seeded down with clover or with timothy, sown in with a previous grain crop. This occurred only at long intervals, however, and the seed used was not only full of impurities but was insufficient in quantity.[3] For the most part, in the intervals between its years of tillage the land was left to "seed itself." Just at the end of the period under consideration the sowing of clover seems to have spread quite rapidly. Livingston, writing in 1813, says: "The introduction of clover, . . . has within the last 10 years made a very sensible improvement in the agriculture of the country . . . . Indeed it is only within the last twenty years that any grass seed has been sown; and it will be no exaggeration to say, that more clover seed has been put in, within the last eight years, than has ever been sown since the country was inhabited."[4]

The pasturage furnished subsistence for the farmer's cattle, sheep, and horses during the summer months;[1] the hay, supplemented to some extent with corn stalks, rye and wheat straw, and potatoes, supplied their winter fodder. Grain was rarely fed, except to hard-worked horses, or to beef cattle which were being fattened for slaughtering. A typical inland farm of 100 acres was able to support in this manner 10 or 15 cows, including young stock, one or two yoke of oxen, one or two horses, a flock of from 10 to 20 sheep and about as many swine as cows.[2]

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[1] President Butterfield of the Massachusetts Agricultural College, has written: "It is sometimes asserted that the soil of New England is a drawback. On the contrary it is an asset. True there are many square miles . . . . consisting of ledges, others almost plastered with boulders; but wherever there is clear soil it is good soil—the very best." Art. N. E. Agriculture. In New England—What It Is and What It Is To Be. (George French, ed.) Boston. 1911. p. 115.

[2] Dwight wrote: "Grass is undoubtedly the most valuable object of culture in New England." Travels, I. 22. The excellence of the natural grass was commented upon in American Husbandry, I. 57. It was this grass which was later introduced into England, receiving the name timothy. After its re-introduction into New England it was known as English grass or spear grass.

[3] Clover was sown at the rate of about six pounds to the acre; of grass seed six quarts were used on the same area. Mass. Agric. Soc. Papers, II. 1807, 29.

[4] American Agriculture, p. 335.

The Native Cattle.

The beef cattle were the descendants of the Devonshire breed originally imported by the earliest settlers, but had received considerable intermixture from the Danish breed imported into New Hampshire and probably also from the Holstein breed brought by the Dutch colonists to New York. These influences, as well as lack of sufficient winter fodder and inattention to selection in breeding, had developed in New England a breed known as "the native cattle," more remarkable for their hardiness than for the production of beef or dairy products. In a few sections, however, such as in the towns of the Connecticut Valley and along the shores of Narragansett Bay,[3] where the pasturage was especially rich and a market for salted beef could be reached, some improvement in the breed was remarked.[4] The dairy products from the farmer's cows were an important article of his diet. In cheese, moreover, an article was found for which the demand in the Southern states and in the West Indies was considerable. Cheese had also enough value in proportion to its weight to bear the expense of transportation by land for some distance. A few towns in Litchfield and Berkshire Counties, on the western edge of New England, and a few others in Rhode Island along Narragansett Bay, and in Windham County in Connecticut, exported large quantities of cheese and grew prosperous in consequence.[1]

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[1] The most reliable writers tell us that cattle were "housed" from the beginning or the middle of November until the middle or latter part of May. The neglect of live stock in this regard, about which travelers had complained at an earlier period (see La Rochefoucauld, I. 495–496; 513), seems to have been caused not by pure inhumanity but by reluctance, perhaps inability, to invest capital in barns and sheds.

[2] These figures are taken from the answers received by the Massachusetts Agricultural Society in reply to their questions of 1806. Papers, II. 1807, 35. They agree in general with those given by Livingston, American Agriculture, p. 335. Occasionally advertisements of farms for sale in the columns of the country weekly newspapers yield information on this point. In Mansfield, Connecticut, the live stock on a farm offered for sale consisted of 10 cows, one yoke of oxen, six three-year-old steers, four two-year-old steers, two horses, 20 sheep and four hogs. Windham Herald, April 10, 1806. A Windham farm had two oxen, two two-year-old steers, five cows, five yearlings, five calves, 16 sheep and two horses. Ibid. November 3, 1808.

[3] Morse considered the cattle in the latter region the finest in New England. They would weigh, he thought, from 1,600 to 1,800 lbs. Gazetteer, 1810, art. Rhode Island.

[4] An improvement in the breeding of cattle was one of the primary objects of the Berkshire Agricultural Society, established by Elkanah Watson in Pittsfield in Berkshire County, Massachusetts, in 1810.

Oxen and Horses.

The cattle not only supplied the farm with beef and dairy products but also furnished a part of its labor force. Oxen were from the beginning the favorite, and, in fact for many years, the only draft animal on New England farms. Although horses were steadily coming into more general use, they did not seriously compete with the slower-moving steers for general farm work for many years after 1810.[2] In 1784 there were about 45,500 horses in Massachusetts and over 162,500 oxen and draft cattle.[3] In 1792 in New Hampshire the proportion of horses to neat cattle was only one in twenty.[4] By 1812 this ratio had increased to about one in seven.[5] In spite of their slowness of gait the oxen had certain advantages which justified the farmers in their use. These are succinctly set forth by President Dwight as follows: "The advantages of employing oxen are, that they will endure more fatigue, draw more steadily, and surely; are purchased for a smaller price; are kept at less expense;

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[1] The town of Goshen, in Litchfield County, was noted for its cheese. Dwight wrote of this town: "It is, perhaps, the best grazing ground in the state; and the inhabitants are probably more wealthy than any other collection of farmers in New England, equally numerous. The quantity of cheese made by them annually, is estimated at four hundred thousand pounds weight. Butter also is made in great quantities." Travels, II. 355. Pease and Niles give the amount exported from this town in 1819 as 380,266 lbs. Gazetteer, p. 248. A neighboring town, marketed 100 tons of cheese in 1811, besides 6 tons of butter. Morris, Statistical Account of Litchfield, p. 122.

[2] One writer puts the date of the beginning of such competition as late as 1870. See Marquis, J. C. An Economic History of Agriculture in New England since 1840. Thesis submitted to the Faculty of Purdue University for the degree of Master of Science in Agriculture. 1909. Ms. p. 148.

[3] These figures are given in the American Museum, VII. 54.

[4] Belknap, History of New Hampshire, III. 144.

[5] Merrill, Eliphalet and Phinehas, Gazetteer of the State of New Hampshire. Exeter, N. H., 1817, p. 16. The figures are 32,000 and 211,500, respectively.

are freer from disease; suffer less from labouring on rough grounds; and perform the labour better; and, when by age or accident they become unfit for labour, they are converted into beef. The only advantage of employing horses instead of oxen, is derived from their speed."[1]

The use of horses for travel and light transportation increased rapidly with the introduction of wagons and the building of turnpike roads in the first decade of the new century, the oxen being still retained for the heavier tasks of ploughing and of hauling crops, stone and timber.[2] In fact, as Livingston points out, the typical horse of New England, the Narragansett, was much too high spirited and lightly built for farm work.[3] The horses, which were largely raised either by the farmer himself or in the vicinity,[4] had suffered the same degenerating tendency as the cattle. Dickinson wrote: "Our horses are mostly of an inferior kind. Little attention has been paid to them, and it is believed that they have rather declined within fifteen or twenty years. When one casts his eye upon the saddle horses of Virginia, or upon the draft horses of Pennsylvania, he must be strongly impressed with the great improvement of which our comparatively diminutive breed of horses is susceptible."[5]

Swine were kept on every farm, furnishing the salt-pork which was a staple article of diet. They required but little attention; in the fall they were ringed through the nose as a precaution against rooting, and turned out into the stubble fields, as gleaners after the harvest. In the winter they were fed on anything which happened to be superfluous, hay, chestnuts, apples, potatoes, dairy and kitchen refuse. For a few months before slaughtering they were fed on Indian corn. They thrived under this treatment and seem to have been the most successfully developed animals on the farm. Harriott wrote of the swine which he saw in Rhode Island: "Hogs they have as good and as large as can be bred in any part of the globe."[1] In the Newport market he observed several weighing about 600 lbs. each, and on inquiry was informed that such weight was not unusual. The average size in other regions was, however, probably considerably under this figure.[2]

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[1] Statistical Account of New Haven, p. 22. See also American Museum, II. 85; VIII. 24–25. Tudor believed thoroughly in the superior efficiency of oxen. He wrote: "An advantage to the farmer, individually, and a very important benefit in its general results, is owing to the use of oxen, instead of horses, in almost all agricultural labour." Letters on the Eastern States, p. 241.

[2] Horses and oxen had in earlier years often been used together as the following quotation shows: "Our teams used for transportation and the several branches of husbandry have been generally composed of oxen and horses together and our vehicles for carriage have been carts and sleds, but within a few years past waggons drawn by horses have greatly multiplied and the cart harrow and plow are more frequently drawn by oxen alone." Goodrich, Statistical Account of Ridgefield, p. 8.

[3] American Agriculture, p. 336.

[4] Breeding horses and mules for the West India market had become an industry of some importance in a few towns. Advertisements of stallions and Spanish jacks at stud were frequent in the newspapers in Worcester and Windham counties.

[5] Geographical and Statistical View, pp. 11–12.

Sheep of the Common Breed.

The flock of 20 or 25 sheep regularly found on every farm was a characteristic feature of the self-sufficient agriculture. So vitally important were they as the source of supply of wool[3] that in spite of the constant discouragements of colonial days,[4] the sheep had increased steadily in numbers in proportion to the growth of population. No feature of the farm economy shows more clearly than the management of sheep the neglect and want of progress which the lack of a market brought about; and on the other hand, no department of the agricultural industry responded more promptly in improvement when once the market was supplied. Up to 1800 no attempts had been made to improve the breed of sheep. They had, probably, in common with the cows and horses, degenerated since their introduction by the first settlers. They were long-legged, narrow in the breast and back, and slow in arriving at maturity. When fully grown, they yielded only 40 or 45 pounds of mutton, and about three or three and one-half pounds of coarse wool at each shearing.[5]

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[1] Struggles through Life. II. 39.

[2] In the papers of the Mass. Agric. Soc., II. 1807, 38–39, the weights given are from 250 to 400 lbs. See also Belknap, History of New Hampshire, III. 245.

[3] The value of the sheep as meat producers seems to have been quite subsidiary. This was due in large part to a prejudice among the farmers against mutton as an article of diet. See U. S. Dept. of Agriculture. Special Report on the History and Present Condition of the Sheep Industry of the United States. Prepared under the direction of Dr. D. E. Salmon. Washington. 1892. 52 Cong. 2 Sess. Misc. Doc. No. 105, p. 74.

[4] Among these discouragements were the ravages of wolves and later of dogs. It was the desire to escape the former danger which first led to the pasturage of sheep on the islands in Boston Harbor and later on the larger islands of Nantucket and Martha's Vineyard. The flocks on these islands had in 1810 increased to very considerable size (supra p. 290 and note), furnishing a surplus of wool for export. See Wright, C. W., Wool Growing and the Tariff. Harvard University Economic Studies. Vol. V. Cambridge. 1910. pp. 2 ff.

[5] See Sheep Industry in U. S., p. 51; Mass. Agric. Soc. Papers, II. 1807, 38.

The Importations of Merino Sheep.

Between 1800 and 1815, a noteworthy effort was made to improve the native stock by the importation of rams and ewes from Spain. The Spanish Merino sheep had long been famous for the weight and excellent quality of their wool, but on account of rigid exportation restrictions it had been practically impossible to bring representatives of the stock to this country. These restrictions were broken down about the year 1800, during the disorganization of the government of Spain following the Napoleonic invasion. Advantage of this state of affairs was taken by our ambassadors in Spain and France, Col. David Humphreys and Robert Livingston, as well as by certain other Americans who were abroad at that time. They secured a few of these valuable animals, which they shipped back to America. The only importations of importance into New England before 1809 were the flock of 70 ewes and 21 rams sent by Col. Humphreys in 1802.[1] Although from the very first there was no doubt of the great improvement which the mixture of the Spanish with the native breed produced upon the latter,[2] yet the ordinary farmer was slow in benefiting thereby. In the first place, the knowledge of the importations spread slowly, and then the prices at which the Merinos sold were so exorbitant,[3] that few even of the most prosperous of gentlemen-farmers could afford to experiment with them. In general we may say that it was the lack of a commercial stimulus which retarded progress along this line, as well as along all others. The native breed, poor as they were, supplied enough wool and mutton for the farmer's own family.[4] The demand for wool in the domestic industries was, it is true, steadily increasing, but it had not become strong enough to induce a systematic attempt to improve the breed. It was not until the newly established woolen factories[1] had grown to be large consumers of wool that the New England farmers felt the impetus to increased production.

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[1] Sheep Industry in U. S., p. 136.

[2] The Massachusetts Agricultural Society printed in its Papers for 1807 two enthusiastic letters from Colonel Humphreys stating that the Merinos, both of pure and mixed blood, were hardier, better adapted to the climate of New England, and more easily nourished than the common or native breed. In addition they produced more and better wool and attained a larger size and greater weight. pp. 59–63.

[3] Humphreys did not sell any until 1805; then he sold some at prices ranging from $1,000 to $1,500 apiece. Livingston sold his rams at $150 apiece. Sheep Industry in U. S., pp. 140, 167.

[4] Livingston describes the position of sheep in American agriculture as follows: "Sheep have heretofore not been kept in any great numbers. They never made an object in American husbandry. Every farmer kept a few to run over his stubble, and pick up the hay that the horses and cattle wasted. There being no regular demand for wool, no more sheep were kept than supplied the farmer's family with what was necessary for their domestic manufacture of stockings, mittens, petticoats, coverlids, and coarse cloth for servants and children . . . ." American Agriculture, p. 336.

The attempts to improve the breed of sheep by the importation of the Merinos is a typical illustration of a larger movement towards the betterment of the agricultural industry as a whole, which began to make progress in the closing years of the eighteenth century. The impetus came from the patriotic impulses of men of education and of public affairs, who had come to learn of the "new husbandry" of Tull, Bakewell, and Young, which had created such a stir in England. Some of them had by personal observation been impressed with the contrast presented by the results of the improved system beside the wasteful and inefficient methods with which they were familiar at home.[2] Others, like Washington, had learned of the English improvements at second-hand but had increased their knowledge by active correspondence with the leaders of the movement on the other side.[3] The Revolution itself had its part in furthering this new movement. Not only did it arouse a new patriotism, but, in conventions as well as on the field, it brought together and made acquainted the leading men from the various states. When, after these exciting days were over, they had retired to their homes, they turned their energies to the improvement of agriculture.

The Agricultural Societies—Character of their Work.

In order to make their efforts more effective, these pioneers in agricultural improvement formed associations or agricultural societies, modeled in general upon those which had been organized abroad.[4]

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[1] For a discussion of the number and size of these factories established before 1810, see supra pp. 273-274.

[2] Such pioneers in the movement for agricultural improvement as Samuel Adams, David Humphreys, Elkanah Watson, as well as Jefferson and Livingston, had all had opportunities to observe the English and European methods in the years between the Revolution and 1810.

[3] Washington corresponded with Arthur Young, William Strickland, with James Anderson, the Scottish economist and agriculturist, and with Sir John Sinclair, the first president of the British Board of Agriculture. The latter wrote numerous letters to such prominent men as James Madison, John Jay, Gouverneur Morris and James Monroe, which, it must be confessed, were on the whole neglectfully answered. See Sinclair's Correspondence. 2 vols. London. 1831, passim.

[4] The predominance of foreign influences in the establishment of these societies is clearly apparent. In the preface to the Memoirs of the Philadelphia society

The nature of these societies and of the work they proposed to carry on is clearly revealed in the prefaces of their articles of association. They were not intended to be clubs of practical working farmers who might aid each other by the exchange of facts and ideas from experience, but rather groups of men of all professions who were to receive, adapt, and disseminate the knowledge of the progress accomplished in other countries. So the preface to the Laws and Regulations of the Massachusetts Society for Promoting Agriculture[1] reads: "One great object of this Society will be, to obtain and publish an account of the improvements of other countries, and to procure models of the machines in which they excel. It will attend to whatever relates to rural affairs, and especially to promote an increase of the products of our lands, ... To encourage the utmost attention to these objects, the Society will, from time to time, offer such premiums as their funds will admit. They consider agriculture in all its various branches and connexions as highly interesting to all mankind. The wealth and importance of the community, is so intimately connected with, and dependent on the extent and success of agriculture, that every one who is desirous of advancing the happiness, prosperity, and dignity of his country, its commerce, and convenient subsistence of individuals, will lend his aid to this most useful institution."[2] The appeal of the society organized in Philadelphia in 1785 is equally broad.[3]

These appeals were answered in the spirit in which they were

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references are continually made to the superior agriculture of Europe and to the necessity of adopting and adapting its methods. "As other countries receive the benefits of our labours, in the products supplied to them, ... it is fit that we should profit by their experience in the arts of cultivation . . . ." p. viii. This society acknowledged its indebtedness to prominent European agriculturists by electing them to honorary membership. Arthur Young, William Bakewell, and Count Castiglioni, of Milan, were so honored.

[1] Organized 1792.

[2] Published in Boston, 1793. Agric. Repository, Vol I., pp. iii–iv.

[3] Here we read: "THE PHILADELPHIA SOCIETY FOR PROMOTING AGRICULTURE, was formed . . . . , by some citizens, only a few of whom were actually engaged in husbandry, but who were convinced of its necessity; and of the assistance which such an association, properly attended to, would afford to the interests of agriculture. . . . Many citizens have a mistaken idea, that their not being *agriculturists*, disqualifies them from becoming useful members of our Society . . . . The interests of *Commerce*, *Arts*, and *Manufactures*, form, with *Agriculture*, an indissoluble union; to which citizens of every class and calling, have it amply in their power to contribute." Memoirs, Vol. I. pp. ii, iv (note).

issued. An examination of the early membership of these societies shows that they were composed of men in whose lives agriculture was only one of many interests, and often the least important of all. There were in the Massachusetts society men of legal education, who had become prominent in political life, such as Samuel Adams, James Sullivan, then attorney-general of the state and later governor, General Joseph Lincoln, then Collector of the port of Boston, Christopher Gore, John Lowell and Jonathan Mason, all lawyers and active in politics and government. Besides these there were merchants, such as Stephen Higginson, Charles Vaughan and Azor Orne. We find also representatives of the other two professions, ministers and doctors, who, blessed with an outlook on the affairs of the community beyond their immediate duties, turned their attention to improvements in agriculture.[1] The interest of such men as these in agriculture, although no doubt genuine, was nevertheless far different in nature and in intensity from that of the inland farmer who was toiling day in and day out on his 100 acres, endeavoring to make a living for himself and his family. The contrast in point of view which must have existed between the "literary" and the practical agriculturists is evident from such a statement as that of General Warren, in the American Museum. He gives his reasons for being interested in agriculture in the following words: "Agriculture has long been a favourite object with me. In a philosophic view, it is great and extensive; in a political view, it is important, and perhaps the only firm and stable foundation of greatness. As a profession, it strengthens the mind, without enervating the body. In morals, it tends to increase virtue, without introducing vice. In religion, it naturally inspires piety, devotion, and a dependence on providence, without a tincture of infidelity. It is a rational and agreeable amusement to a man of leisure, and a boundless source of contemplation and activity to the industrious."[2]

The influence of these societies on the progress of agriculture in this period, on the methods employed by the farmers in rural communities, was so slight as to be practically negligible. They were "a voice crying in the wilderness," forerunners of improvements comparable to those which had already taken place abroad. But for reasons which we shall presently set forth, the time was not ripe for the acceptance of their doctrines and propaganda. Their principal service was in preparing the way for future progress.[1]

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[1] Such were the Rev. Manasseh Cutler and Cotton Tufts, the physician. The Philadelphia society included such famous persons as John Dickinson, the president of the state, Tench Coxe, merchant and publicist, and Hugh Brackenridge, lawyer and editor. It is interesting to note in this connection that the two most important treatises on agriculture published before 1800 in New England were the work of clergymen, Rev. Jared Eliot, of Killingworth, Connecticut, and Rev. Samuel Deane, of Portland, Maine. See Appendix C.

[2] Op. cit., II. 344.

The Contemporary Criticisms were Deserved.

Reviewing for a moment the evidence presented in the foregoing paragraphs, we can see clearly that the criticisms of New England agriculture at the beginning of the nineteenth century were fully deserved. The tillage of the fields was but a superficial scratching of the surface soil with clumsy tools; very little care was taken to preserve or increase the fertility of the soil by crop rotation or even by the simple and obvious method of applying manures; because of the neglect of root crops, the fodder for live stock was insufficient; the lack of nourishment, coupled with imperfect shelter and inattention to the principles of selection in breeding, had caused a general degeneration in practically all kinds of domestic animals. The same lack of intelligent effort, seen in the neglect of the productivity of his land and stock, is evident in the farmer's management of his orchards and woodlands. In general, the system of agriculture was not only extensive but even in many respects predatory; the farmers had little stimulus to get anything beyond a living, and in getting that they had little regard for the effects which their system of husbandry might have on the prosperity of future proprietors of their land.

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[1] There were perhaps a dozen of these societies organized, principally in cities on the eastern seaboard, before 1800. Among this number were those organized in Charleston, S. C., in 1784; in Philadelphia, in 1785; in New York, 1791; and in Boston, 1792. Besides these there were a few smaller societies such as the Western Society of Middlesex Husbandmen, 1794; the Kennebec Agricultural Society, 1800; and the New Haven County (Conn.) Agricultural Society, 1803. In the smaller societies the practical farmers seem to have formed a large, perhaps a predominant element, but the initiative and direction came from men whose interest in agriculture was but subsidiary to other interests. See Carver, Historical Account, p. 56; and Butterfield, K. L., Art. Farmers' Social Organizations, in Bailey's Cyclopedia of American Agriculture, IV. 290–291. The manuscript Proceedings of the New Haven society are preserved in the library of Yale University. The transactions of some of the larger societies, such as those in Philadelphia and Boston, were published, along with various contributed articles. These publications are more valuable for the light they shed on the state of scientific knowledge of agriculture than for information on the current practices of farmers.

But the Explanation Given was not Sufficient.

The reasons for the foregoing state of affairs generally given by contemporary and later writers on the subject may be grouped under three chief heads: (1) the ignorance of the farmers of what we now recognize as the fundamental principles of scientific agriculture; (2) the conservatism which bound them down to traditional methods; (3) the cheapness of land and the consequent high price of labor. All of these conditions undoubtedly existed and each contributed in its own way to prevent progress, yet none of them, it seems to me, would alone, or in combination with the others, have been able to prevent progress in agriculture if it had not been for the presence of another and more decisive condition, the lack of a market.

Inefficiency of Agriculture was not Due to Ignorance.

The typical inland farmer was undoubtedly ignorant of the best methods of tillage and of fertilization, and of the fact of increased productivity which the application of these methods would bring. But this was not a necessary or an inevitable state of affairs. The knowledge of the improvements which had been accomplished abroad was accessible in this country. Beginning with the publication of the first of the Reverend Jared Eliot's Essays on Field Husbandry in New England, in 1749,[1] an unwearying attempt had been made by men of education to bring to the attention of farmers in the Eastern states, and particularly in New England, the importance of changing their methods. The result had been the publication of a respectable body of literature on the subject, including at least sixteen works[2] of a general nature, in which the contrast between the methods employed at home and abroad were pointed out, the improvements introduced by Tull, Bakewell and Young were outlined and discussed in simple language, and suggestions were made for adapting their discoveries to the conditions prevailing here. Besides these there were published a considerably larger number of pamphlets, dealing with special branches of the agricultural industry, such as the use of gypsum as a fertilizer, the advantages of rotation of crops, the breeding of sheep and the management of bees. The agricultural societies were spreading similar information through their published reports, and such periodicals as The Old Farmer's Almanack and the American Museum[1] were helping along the cause of education by repeated admonitions, "in season and out of season."

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[1] These essays, six in all, appeared separately in the years 1749–1759, and were in 1760 published in collected form.

[2] About half of these were published before 1800. For a partial list of titles of the general and special works on agriculture published in this country before 1815, see Appendix C.

Little could have been expected in the way of results from this propaganda, if the farmers had not been fitted by nature or training to receive it. But it seems evident that the New England farmers were both intelligent and educated enough to see the advantages of the new husbandry and to apply its methods. It is universally recognized that the general level of education was at this time higher in New England than in any other part of the country. Common schools, at which attendance was compulsory, were found in every town[2] almost as soon as it was settled. The terms in these schools were, it is true, short, and the teachers often inefficient, but even if the bulk of the pupils never progressed beyond the rudiments, still the training was universal and furnished a valuable working equipment.[3] There is also evidence at hand that the farmers showed a disposition to utilize and improve their knowledge by reading. "Social libraries" were found even at this early date in many of the older towns and parishes,[4] and newspapers, both those which were published in the inland towns themselves and those from the commercial towns,[5] were read everywhere with avidity. So widespread was this habit that not only did travelers comment upon it,[1] but the conservative Dwight was moved to remark: "The reading of newspapers in this country is undoubtedly excessive, as is also the number of such papers annually published."[2] The same author however, recognized clearly the advantages of education in general on the productive capacity of the community, setting them forth as follows: "A New Englander imbibes, from this education, an universal habit of combining the objects of thought, and comparing them in such a manner as to generalize his views with no small degree of that readiness and skill, which in many countries are considered as peculiar to a scientifical education. Hence he often discerns means of business and profit, which elsewhere are chiefly concealed from men of the same class. Hence, when prevented from pursuing one kind of business, or unfortunate in it, he easily, and in very many instances successfully, commences another. Hence he avails himself of occurrences, which are unregarded by most other men. . . . . Universally our people are, by this degree of education, fitted to make the best of their circumstances, both at home and abroad; to find subsistence where others would fail of it; to advance in their property, and their influence where others would stand still; and to extricate themselves from difficulties where others would despond."[3]

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[1] The American Museum appeared monthly in the years 1787–1792. It was published in Philadelphia but seems to have had many readers and contributors in New England. The Old Farmer's Almanack was established by Isaiah Thomas in Worcester in 1793 and has appeared annually since that date.

[2] An exception should be made for certain towns in Rhode Island. In that state the law requiring the establishment and maintenance of such schools had been repealed a few years before 1810. See Morse, Gazetteer, 1810, art. R. I.

[3] No doubt the value of the education received in these schools has been overrated along with other features of "the good old days," especially in comparison with the training given to children in modern schools. Here we are concerned with its absolute rather than with its relative value. See Adams, C. F., Episodes, II. 781.

[4] In Pease and Niles' Gazetteer of Connecticut and Rhode Island the social library is almost as regularly mentioned in the descriptions of the various towns as are the saw-mills or the ministers and doctors.

[5] As early as 1790, there were 37 periodicals published in New England, of which three appeared semi-weekly, 32 weekly, and two monthly. U. S. Department of Commerce and Labor, Bureau of the Census. A Century of Population Growth. Washington. 1909. pp. 32–34. A few years later, according to Dwight, Travels, IV. 344–345, the total had grown to 55. Before 1800 newspapers had been established in such inland towns as Worcester, Pittsfield, Stockbridge, Greenfield, Northampton and Brookfield, in Massachusetts; in Litchfield, Windham and Danbury, in Connecticut; in Brattleboro and Rutland, in Vermont; and in Hanover, Keene, Concord, Amherst, Walpole, and Gilmanton, in New Hampshire. See U. S. Library of Congress. Check List of American Eighteenth Century Newspapers. Washington. 1912.

As an instance of the effects of this universal education in quickening intelligence, Dwight cites one of those "many original machines for abridging human labour, and improving its results," the stocking-loom. He might have cited the machine for cutting and heading nails and tacks,[4] the system of interchangeable parts in the manufacture of muskets, perfected by Eli Whitney in New Haven,[1] and improvements in a number of other lines of manufacture, such as the making of tin plate in Meriden, in Connecticut, and the manufacture of wooden clocks in Waterbury, all of which displayed the ingenuity of his countrymen along mechanical lines. Why was it that this spirit of progress and invention, this capacity to work out new ideas and to apply the ideas of others did not display itself in agriculture? Certainly there was a large field for improvement there. The answer is simple. The application of genius and energy along mechanical lines was profitable, because a market could be found for the improved and increased product; a market for increased agricultural produce was not at hand, therefore progress along that line was not remunerative.

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[1] Foreigners traveling in this country remarked upon the wide circulation of newspapers. Lambert while on a journey from Boston to Walpole, in New Hampshire, noticed that the stage-coach driver distributed these papers along the route, remarking: "There is scarcely a poor owner of a miserable log hut, who lives on the border of a stage road, but has a newspaper left at his door." Travels, II. 498–499. Rochefoucauld had written somewhat earlier of Massachusetts: "Not a house is to be found in the most remote corners of the country, where a newspaper is not read; and there are few townships that do not possess little libraries formed and supported by subscription." Travels, II. 215.

[2] Travels, IV. 344, note.

[3] Ibid., IV. 348–349. For a detailed description and discussion of educational facilities provided in New England see Ibid., pp. 282–298.

[4] A patent for such a machine was issued to one Jesse Reed of Boston, 1807. See Bishop, History of American Manufactures, II. 125–126. A similar machine was invented by Jacob Perkins of Newburyport, Mass., about 1790. See Swank, J. M. The Manufacture of Iron in New England. In the New England States, I. 374.

Conservatism.

Conservatism has always been acknowledged as a characteristic quality of any agricultural population, especially in countries where the land is held in small tracts in fee simple and cultivated by the owners. New experiments are always made reluctantly; with limited resources the failure of a single crop may bring disaster. The New England farmers were undoubtedly conservative,[2] but it seems illogical to select this quality of their minds as a determining factor in the explanation of the lack of agricultural progress. For if conservatism had been so important it would have affected not only the inland farmers but also those of the coast regions. The latter had behind them the same ancestry and the same traditions, the conditions of land tenure were the same; but yet, as we have seen, they did not hesitate to make new ventures, to invest labor and capital in their farms, to modify their practices in any way that seemed to offer more profit.

Land was Cheap and Labor Dear—Washington's Explanation.

The third argument, that concerning the relative prices of land and labor, deserves more serious consideration. It is given most prominence by those writers who were intelligently seeking an economic explanation of the phenomena they observed. So Washington wrote: "An English farmer must entertain a contemptible opinion of our husbandry, or a horrid idea of our lands, when he shall be informed that not more than eight or ten bushels is the yield of an acre: but this low produce may be ascribed, ... to a cause which I do not find touched by either of the gentlemen whose letters are sent to you, namely that the aim of the farmers in this country (if they can be called farmers) is, not to make the most from the land, which is or has been cheap, but the most of the labour, which is dear: the consequence of which has been, much ground has been *scratched* over, and none cultivated or improved as it ought to have been; whereas a farmer in England, where land is dear and labour cheap, finds it his interest to improve and cultivate highly that he may reap large crops from a small quantity of land."[1]

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[1] See Dwight, Statistical Account of New Haven, pp. 38–39.

[2] General Warren wrote: "Our farmers have all along followed the practice of their fathers, which might be adopted, at first, from necessity, and is pursued from want of spirit to adopt a better and more rational system by those who are convinced of the absurdity of it." American Museum, II. 346.

Livingston wrote in much the same strain. Speaking of the disparagements cast upon the agriculture of this country by foreigners, he says: "To this we must add an erroneous idea, that most strangers entertain of the perfection of agriculture: they presume, that it consists in obtaining the greatest quantity of produce from a given quantity of land; and when they find that the arable yield of our fields is less than that of their native country, they at once pronounce us miserable farmers; not considering, that agriculture is good, or bad, in proportion to the return which it makes for the capital employed, and that the capital consists not of land only, but of stock, land, and labour. In countries in which a great population causes land to be dear, and labour cheap, the farmer expends much labour on little land, and renders that extremely productive, and the reverse where land is cheap, and labour dear. . . . . Considered in this view, we are much inclined to think, that the agriculture of the United States is at least equal to that of Europe; . . . ."[2]

The Effect of Cheap Land—The Frontier.

In an examination of the influence of the relative values of land and labor on agricultural methods and progress, it seems to me that attention should be concentrated on the causal factor, the cheapness of land. The high price of labor may have affected the calculations and management of the farmers in the few favored regions, such as the towns in the neighborhood of Boston, but it is difficult to see how this condition could have had any significance for the farmers in inland towns. To farmers who never hired any labor, what difference could it make whether the price of labor was high or low? For the ordinary operations of farm life, directed only to supply a single family with the necessaries of life, the labor force of that family was sufficient. To spend any amount, however small, in hiring labor to raise a surplus of crops or live stock for which no market could be found would have been economic folly.

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[1] This letter of Dec. 5, 1791, addressed to Arthur Young, is quoted by Blodget, Samuel, Junior. Economica: A Statistical Manual for the United States of America. Washington. 1806, p. 91. It is not, however, found in either Sparks' or Ford's editions of Washington's works. It was supposed to have accompanied a description of agriculture in the United States, which, in response to Young's request, Washington had compiled from queries addressed to prominent men in various states.

[2] American Agriculture, pp. 332–333. In a later passage, p. 341, the writer admits that such a system may be disastrous for the community, even if it be justified from the point of view of the individual's interest.

The cheapness of land, on the other hand, was a matter of vital importance. In a new country where land is cheap we naturally expect to find an extensive system of agriculture. When, however, a country, or a section of it, becomes fully settled, as New England was in 1810, an increase in population demands an increase in the supply of foodstuffs. Under an extensive or a predatory system of cultivation, a stage of diminishing returns is soon reached at which this increased supply can be obtained only at a more than proportional expense of labor and capital. Two courses are then open to the farmers. Either they must send the surplus of their population to new lands in another section of the country, or, if such lands are unavailable, they must if possible amend their methods, introduce improvements and so postpone the stage of diminishing returns. At any rate, an increased product must be forthcoming; either emigration will ensue or a more intensive system of cultivation must be adopted. Now it was the presence of large tracts of uncleared land, of as great if not of greater fertility than that which the farmers of inland towns were then cultivating, to be had almost for the asking, which persuaded them to choose the former of these alternatives.

Emigration.

Emigration began from the older towns before 1750, first to the as yet unsettled counties in the northern and western sections of Massachusetts, and after the Revolution to the states of northern New England.[1] Thus the annual surplus of population was drained off and the remainder managed to get a living without introducing new methods of agriculture. Tudor describes this process and its results as follows: "The spirit of emigration, acting with full force on an enterprising people, easily induced them to go to new states in pursuit of the real or delusive advantages that were held out to them. This constant draining from our population, while it afforded a hardy, vigorous race for the cultivation of new territories; may have produced a greater increase to the ultimate good and power of the nation, than would have happened if these emigrants had remained stationary; still it occasioned some local disadvantages. In the first place it prevented the inhabitants from thinking of any improvement; if their farm was not sufficiently productive, the easy remedy to a restless people was to sell it, collect their effects and go five or fifteen hundred miles (the distance, greater or less, was not thought of) in pursuit of a richer soil. It was not by the employment of greater skill, but by a change in location, that they sought to improve their condition."[1]

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[1] For a fuller consideration of the amount and direction of emigration in this period, see Appendix B, pp. 383 ff.

The Real Cause of Inefficient Agriculture was the Lack of a Market for Farm Products.

The ignorance and the conservatism of the farmers were undoubtedly to some extent hindrances to agricultural progress; cheap land on the frontier discouraged intensive cultivation at home; but these circumstances do not, either alone or in combination, furnish a sufficient explanation for the state of the industry which prevailed. In the background lay a condition of much more significance, because of its determining force upon all the others. I refer to the lack of a market for agricultural products. Once given a market, neither ignorance of the improved methods of agriculture nor the reluctance to experiment along new lines, proceeding from a conservative disposition, nor the cheapness of land, inviting extensive cultivation, could long have stood in the way of progress. If the farmers of the inland towns had had an opportunity to exchange for the products of the outside world their grain, meat and dairy products, they would have seized upon every scrap of information regarding the means by which their fields and live stock could be made more productive; their adherence to traditional methods would have been weakened, and they would have applied to the conduct of agriculture the same adventurous and ingenious spirit which they displayed in the field of mechanical invention and in that of commercial enterprise. Labor might still have been expensive, yet they would have employed others to work for them. The expense of labor was at this time a hindrance to the growth of manufactures, also, but when the market was opened through the failure of European competition, during the period of the Embargoes and the War of 1812, manufacturers found it profitable to employ workers even at the high wages demanded.

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[1] Letters on the Eastern States, pp. 234–235.

In fact we have repeatedly noted in the preceding sections of this chapter that wherever a body of farmers were so situated as to be able to reach a market, whether in the commercial towns of the seacoast or in the West Indies, there these obstacles to progress had already, to some extent, been overcome. Dickinson recognized this fact when he wrote: "Our farmers prefer exerting their labor upon a large field, to employing the same on a small one. Deviating, however, from this rule, in the vicinity of populous towns, and on navigable waters, where the price of land enters more highly into the farming capital, they have paid more attention to husbandry, and increased their produce by additional expenditures of labor."[1] Had this author carried his analysis only one step farther and asked himself the question, "Why is the price of land higher in the vicinity of populous towns and on navigable waters?" the answer would have given him a much more fundamental reason for the improvements which he observed. It was the presence of a market, an opportunity to sell produce, which increased the competition for these lands, which made the farmer willing to pay highly for the opportunity of entering that market.

On the other hand, all other stimuli to agricultural improvement were futile as long as the market was lacking. We have seen that the campaign of education of the latter part of the eighteenth century was without results. It is difficult to see how a cheaper labor force could have produced any different results. The revolution in agriculture, as well as the breaking down of the self-sufficient village life, awaited the growth of a non-agricultural population. Between the years 1810 and 1860 such a population arose in the manufacturing cities and towns of New England, and the market thus created brought changes which opened up a new era to the farmers in the inland towns.

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[1] Geographical and Statistical View, p. 8.

CHAPTER VI.

HOME AND COMMUNITY LIFE IN THE INLAND TOWN.

At the conclusion of the survey of economic conditions in southern New England in 1810 which occupied the first four chapters of this essay, we ventured the statement that the most important circumstance determining the life of the inhabitants of inland towns was the lack of a market. In the preceding chapter the assertion has been partially justified by an examination of the effect of this circumstance, this commercial isolation of the inland town, on the agricultural industry carried on by its inhabitants. It remains for this chapter to consider to what extent the peculiar characteristics of home and community life in these towns were also dependent on the same cause. The best place to look for the influence of a market, or the effects of a lack of it, is in the everyday life of the farmer himself. If our reasoning up to the present has been accurate, we should expect to find him unable to sell more than a trifling amount, if any, of the produce of his land, and consequently unable to purchase goods to any considerable extent from the outside world. He and his family must have constituted very nearly an economic microcosm, a self-sufficient household economy, supplying their wants almost entirely by their own labor, except for occasional neighborly coöperation, and relying hardly at all on the exchange of products or services with outside communities.

The Self-sufficiency of New England Farms.

The facts, as far as they can be learned, give ample support to this deduction. It would naturally be expected that, given the soil and climate of New England which lend themselves to the cultivation of a variety of food products, the farmer would be able to provision his family from his own land, but the extent of this self-sufficiency is somewhat surprising. Dwight tells us[1] that flesh and fish were the principal food of the inhabitants of New England. A more concrete description of their fare is that given by Felt: "For more than a century and a half (*i.e.*, up until almost 1800) the most of them had pea and bean porridge, or broth, made of the liquor of boiled salt meat and pork, and mixed with meal, and sometimes hasty pudding and milk—both morning and evening."[1] Except for the salted cod which made a favorite Saturday dinner for families a considerable distance inland, the use of fish was probably confined to the seacoast regions and to towns along the rivers where fishing was regularly carried on,[2] as a by-industry of agriculture. Beef, pork, and mutton were all supplied from the farmer's own flocks and herds. He was often his own butcher, although at times he called upon some neighbor for this service. Owing to the lack of facilities for refrigeration most of the meat was dried, salted or pickled,[3] operations performed by the women of the household. They also supplied the table with butter and cheese, and tried out the lard used in cooking.

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[1] Travels, IV. 341.

The common bread of the country people was made of a mixture of Indian corn meal and rye flour ("rye and Injun"), ground at the local grist-mill from the farmer's own grains. Wheat bread was in common use only in the seaports, whither the grain was brought[4] from the Southern and Middle states, and in the region west of the Connecticut River, where the soil was best suited to the cultivation of this grain.[5] Fruits and vegetables grew everywhere in as great a variety and abundance as the farmer could find time to plant and cultivate. The orchards were especially important for their supplies of cider, the favorite drink of the country population.

Not only these staples of diet, but even some of the condiments which made them palatable were supplied from the farm. The business of making sugar and syrup from the sap of maple trees was a regular department of the routine operations of inland farms.

[1] History of Ipswich, p. 30.

[2] Supra Chapter II.

[3] A somewhat irregular supply of fresh meat was obtained by the practice of slaughtering an animal in alternation with one's neighbors and distributing parts of the carcass to the several families. A quarter of beef or mutton, or a side of pork could be consumed by a single family before it spoiled, whereas a large part of the meat would have been wasted, if not preserved in some way, had it all remained in one household. This practice still obtains in country districts. It is one of the few surviving remnants of the various forms of coöperation which were necessary in those days.

[4] Supra p. 303, note 5.

[5] Warden, D. B. Statistical, Political and Historical Account of the United States of North America. 3 vols. Edinburgh. 1819. Vol. I., p. 329, estimates that corn and rye bread was eaten by four-fifths of the inhabitants of Massachusetts. See also Dwight, Travels, I. 340.

The season, as marked off in the annual editions of the Old Farmer's Almanack,[1] was from the end of February until the beginning of April, a period when other outdoor operations were at a standstill. The apparatus required was simple and inexpensive, consisting merely of wooden troughs and buckets and iron kettles. The farmer and his sons collected the sap and the women of the family attended to the process of boiling or "sugaring-off," as it was called. With an average product of five pounds of sugar from each maple tree[2] it was not difficult to obtain in this way the whole annual supply of a family. Although generally of a poorer quality than the cane sugar from the West Indies which was used in the coast towns, yet when sufficient care was taken, a fine-grained, clear product could be obtained.[3] Another substitute for the cane sugar was the honey obtained from the hives of bees which were considered an important adjunct of every well-managed farm.[4] Although a single hive would yield from 30 to 40 pounds of honey, besides five or six pounds of wax, yet this was a much less important product than the maple sugar, principally because of the amount of attention which the bees required in the early summer, when the farmer was most busy with other operations.[5]

The articles of diet which the farmers used and which they could not produce were salt, tea and coffee, molasses and rum. The first of these was, of course, absolutely necessary, and consequently it formed one of the most important articles in internal trade. Molasses was another substitute for sugar, and the rum which was distilled from it either in New England or in the West Indies, was a beverage rivaling cider in its popularity. It was a favorite tavern tipple and in some of the more accessible towns it was supplied to farm laborers in the hay-fields.[6] Tea and coffee seem to have been coming into general use throughout New England at this time. Dwight says:

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[1] Kittredge, The Old Farmer and his Almanack, pp. 121–123.

[2] Coxe, View, pp. 681–682. Coxe believed thoroughly in the importance of the maple sugar industry and in the possibility of obtaining the whole domestic supply from this source. Dwight claims to have known a single tree to yield fourteen pounds of sugar in a season. Of the quality of the product he says: "I have seen the grain of this sugar as large and fine as that of the best Muscovado." Travels, I. pp. 15–16.

[3] Belknap, History of New Hampshire, III. 113–116, gives a detailed description of the process of making maple sugar as observed in New Hampshire.

[4] See Notes on Farming, p. 38.

[5] Mass. Agric. Soc. Papers, II., 1807, 40–41.

[6] See advertisement in the Windham (Conn.) Herald, June 3, 1806.

"Tea and coffee constitute a part of the breakfast and supper of every class, and of almost every individual."[1] Coxe, speaking of the whole country, said that teas were consumed freely by rich and poor, and adds that in 1790 they formed one-seventh of the total imports.[2] In Barnstable County, Massachusetts, where the fisher-farmers were able to purchase more from the outside than the inland folk, the plentiful consumption of this stimulant was thought to be the cause of the prevalence of nervous complaints.[3] The difficulty with which tea and coffee were obtained by the inland farmer is shown by the list of substitutes to which resort was occasionally had. For tea, raspberry and blackberry leaves were used and instead of coffee, parched rye and chestnuts, and even potatoes roasted and ground to a powder.[4]

Clothing—The Age of Homespun.

In the matter of clothing the farm was quite as self-sufficient as in diet. The Age of Homespun[5] is a title which has been very appropriately applied to this period, recognizing as it does the predominant importance of the domestic textile industries. All the evidence available tends toward the conclusion that the inhabitants of the rural towns, both men and women, were clothed in fabrics spun and woven in their own homes from the wool and flax grown on their own flocks and in their own fields. Statesmen such as Hamilton and Gallatin early recognized the extent of this branch of domestic industry. The former wrote in 1791: "Great quantities of coarse cloths, coatings, serges, and flannels, linsey woolseys, hosiery of wool, cotton, and thread, coarse fustians, jeans, and muslins, checked and striped cotton and linen goods, bed ticks, coverlets and counterpanes, tow linens, coarse shirtings, sheetings, towelling and table linen, and various mixtures of woolen and cotton, and of cotton and flax, are made in the household way, and, in many instances, to an extent not only sufficient for the supply of the families in which they are made, but for sale, and even, in some cases, for exportation.[1] It is computed in some districts that two-thirds, three-fourths, and even four-fifths, of all the clothing of the inhabitants, are made by themselves."[2] Twenty years later Gallatin wrote: "But by far the greater part of the goods made of those materials (cotton, flax, and wool) are manufactured in private families, mostly for their own use, and partly for sale. They consist principally of coarse cloth, flannel, cotton stuffs and stripes of every description, linen, and mixtures of wool with flax or cotton. The information received from every State and from more than sixty different places, concurs in establishing the fact of an extraordinary increase, during the last two years, and in rendering it probable that about two-thirds of the clothing, including hosiery, and of the house and table linen, worn and used by the inhabitants of the United States, who do not reside in cities, is the product of family manufactures."[3]

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[1] Travels, IV. 342. Both of these beverages were, however, of recent introduction. Felt tells us that the colonists in Ipswich were unfamiliar with the proper method of brewing tea until about 1760. Coffee had been used somewhat, but only by the wealthier families, before the Revolution. History of Ipswich, p. 28.

[2] View of the U. S., p. 117.

[3] See Mass. Hist. Soc. Coll., I. 3: 13.

[4] See Earle, Home Life, pp. 158–159; and Kittredge, The Old Farmer and His Almanack, p. 185. These substitutes must have been nearly as unsatisfactory as the bark of the prickly ash tree, which Belknap says was used by the back-country people of New Hampshire instead of pepper. History of New Hampshire, III. 125.

[5] This is the title of an address delivered by the Rev. Horace Bushnell at the Centennial Celebration of Litchfield County, Conn., in 1851. It is contained in a volume of his collected works entitled Work and Play. New York. 1864. pp. 368–402. In his address the author says much that is thoughtful and significant concerning the effects of the self-sufficient family economy on the formation of individual character and on the social life of the village communities.

More significant than these statements, however, because applying specifically to New England, are those to be found in the gazetteers of the time. Pease and Niles say of Connecticut: "The domestic manufactures in this State are extensive and important, and consist of woolen, linen, and cotton; but the former is by far the most important. With the exception of the cities, almost every family manufactures the substantial woolen fabrics, for their own consumption."[4] Of the same state Morse says: "The farmers in

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[1] In Gallatin's Report on Manufactures (1810), the textile manufactures of families in New Hampshire are estimated to average from 100 to 600 yards in a year. Of their sale we read: "Considerable quantities of coarse flaxen cloth, worth from 15 to 20 cents a yard, thus manufactured in families, are sold to traders in the country villages or in towns, and sent for a market to the Southern States, on which a profit is made by the trader." In American State Papers, Finance, II. 435. We find occasional references to the purchase of homespun cloth by the country stores in the advertisements of such newspapers as the Windham (Conn.) Herald. There is not sufficient evidence of this sort, however, to lead to the conclusion that this manufacture of cloth for export by farmers' families was uniformly found in inland towns.

[2] Report on Manufactures, 1791. In American State Papers, Finance, I. 132.

[3] Report on Manufactures, 1810. In American State Papers, Finance, II. 427.

[4] Gazetteer, p. 17.

Connecticut, and their families, are mostly clothed in plain, decent, homespun cloth. Their linens and woolens, are manufactured in the family way; . . . ."[1] In the statistical descriptions of various towns we find such statements as this: "The people generally manufacture their woolen and linnen cloaths in their own families, using all of their wool and most of their flax."[2] If we could have examined the wardrobes of the men and women of the rural towns piece by piece, we should have found everything of household manufacture,[3] with the exception of the few bits of Sunday finery, hard earned and long-treasured, such as a beaver hat, shoe-buckles, or a fancy waistcoat, a silk gown and a few ribbons.

The best description of the dress of the country folk at the beginning of the last century, which I have been able to find, is that contained in a manuscript prepared by Governor Treadwell of Connecticut, in the year 1802 or 1803. The governor lived in Farmington, a town ten miles west of Hartford on the Farmington River. The conditions of dress and life which he describes are of the period 1760–1770. He remarks that between that time and 1800 a considerable change had taken place, owing to the increasing commerce between the town and the outside world, via Hartford and the Connecticut River. Such a change had, however, not yet taken place in towns less favorably situated, and for them the conditions described still obtained. In fact, the homespun garb prevailed in some districts for several decades after 1800. Rev. Horace Bushnell said in 1851 to the people of Litchfield County, Connecticut: "You have remembered the wheel and the loom. You have recalled the fact that our Litchfield County people, down to a period comparatively recent, have been a people clad in homespun fabrics—not wholly, or in all cases, but so generally that the exceptions may be fairly disregarded."[4]

Governor Treadwell wrote as follows: "Our ancestors here, of both sexes, have, till of late, clad themselves in simple apparel, suited to their moderate circumstances and agricultural state. The men have been content with two suits of clothes, called the every-day clothes, and the Sabbath-day clothes. The former were usually of two sorts, those for labour, and those for common society. Those for labour in the summer were a check homespun linen shirt, a pair of plain tow-cloth trowsers, and a vest generally much worn, formerly with, but more modernly without sleeves; or simply a brown tow-cloth frock and trowsers, and sometimes a pair of old shoes tied with leather strings, and a felt hat, or an old beaver hat stiffened and worn white with age. For the winter season they wore a check blue and white woolen shirt, a pair of buck-skin breeches, a pair of white, or if of the best kind, deep blue home-made woolen stockings, and a pair of double soled cowhide shoes, blacked on the flesh side, tied with leather strings; and, to secure the feet and legs against snow, a pair of leggins, which, for the most part, were a pair of worn out stockings, with the bottom and toe of the foot cut off, drawn over the stocking and shoe, and tied fast to the heel and over the vamp of the shoe; or if of the best kind, they were knit on purpose of white yarn, and they answered for boots on all occasions; an old plain cloth vest with sleeves, lined with a cloth called drugget: an old plain cloth great coat, commonly brown, wrapped around the body, and tied with a list or belt: or as a substitute for them, a buck-skin leather waistcoat and a leather apron of tanned sheep-skin fastened round the waist, and the top of it supported with a loop about the neck, and a hat as above, or a woolen cap drawn over the ears.

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[1] Gazetteer, 1810, art. Connecticut.

[2] Goodrich, Rev. Samuel. A Statistical Account of Ridgefield in the County of Fairfield (Conn). MS. in the library of the Connecticut Historical Society Hartford, Conn., p. 5. The date is uncertain. The manuscript was deposited in the library in 1800; internal evidence indicates that it was written a few years earlier.

[3] Women's hats were at times of household manufacture. See Gallatin, Report on Manufactures, p. 439. Also Earle, Home Life, pp. 259–261.

[4] Age of Homespun, p. 372.

"For ordinary society in summer, they were clad in a check linen homespun shirt and trowsers, or linen breeches, white homespun linen stockings, and cowhide single soled shoes, a vest with sleeves usually of plain brown cloth, a handkerchief around the neck, a check cap, and a hat in part worn.

"In winter they were clad as above described for summer except that they assumed, if they had it, a better great coat, a neckcloth and a hat that might be considered as second best. Their Sabbath-day suit for winter, was like that last mentioned, except that their stockings were commonly deep blue, their leather breeches were clean and of a buff colour, they added a straight-bodied plain coat and a white holland cap, and sometimes a wig with a clean beaver hat. For the summer it was a check holland shirt, brown linen breeches and stockings, single soled cow hide shoes with buckles, a plain cloth and sometimes a broadcloth and velvet vest, without sleeves: the shirt-sleeves tied above the elbows with arm strings of ferreting of various colours, a white holland cap or wig, and beaver hat: and on Thanksgiving days, and other high occasions, a white holland shirt and cambric neckcloth.

"The women have been, till within about thirty years past, clothed altogether in the same style, with a moderate allowance for the taste of sex. A minute description will not be attempted; a few particulars will characterize the whole. They wore home-made drugget, crape, plain cloth and camblet gowns in the winter, and the exterior of their under dress was a garment lined and quilted, extending from the waist to the feet. Their shoes were high-heeled, made of tanned calf-skin, and in some instances of cloth. In the summer they wore striped linen and calico gowns, cloth shoes and linen underdress: and every young lady when she had attained her stature, was furnished with a silk gown and skirt if her parents were able, or she could purchase them by dint of labour. Their head dress has always occupied a great share of their attention while in youth; it has always been varying, and every mode seems, in its day, the most becoming. Within the period just mentioned, the elderly women have worn check holland aprons to meeting on the Sabbath, and those of early life, and of the best fashion, were accustomed to wear them in their formal visits."[1]

The Organization of the Household Industries.

The production in the household of woolen and linen, and to some extent also cotton fabrics, not only clothing but also the necessary house furnishings, such as sheeting, toweling, blankets, and table linen, and even such coarse fabrics as rag carpets and grain bags, was a well-organized industry. The various successive stages in the conversion of the raw materials into the finished product were regularly assigned to members of the family according to their strength and skill. Thus the men sheared and washed the wool, and performed most of the laborious processes of breaking, swingling and hackling the flax to prepare the fiber for spinning. The carding of the wool, corresponding in a way to these processes, was for years the task assigned to the older members of the family whose strength and eyesight would have been unequal to more onerous and careful work. About the year 1800, however, the household was relieved of this task by the introduction of the water-power carding machines, which, as we have seen, spread so rapidly that they were to be found in almost every village in 1810.[2] The younger women of the family

[1] Printed in Noah Porter's Historical Discourse. Appendix, Note S, pp. 82–83.

[2] Supra p. 260.

spun the fibers thus prepared into yarn and thread on the large and small wheels then found in every farmhouse. Bleaching and dyeing were also a part of the multifarious activities of these women. In the latter process almost all the materials used, such as pokeberries, madder, goldenrod, the bark of the hickory, butternut and sassafras trees, and various flowers, could be found in the woods and fields. For producing the deep blue which was so popular, indigo must be imported, and this was one of the few standard commodities sold at the stores and by itinerant peddlers.

Weaving, the next stage in the production of homespun cloth, was not so uniformly performed in every household. Looms were, however, to be found in every house of considerable size, and many houses had a room, or an ell, especially devoted to these ponderous and noisy machines. Gallatin wrote in 1810: "Every farmer's house is provided with one or more wheels, according to the number of females. Every second house, at least has a loom for weaving linen, cotton, and coarse woolen cloths, which is almost wholly done by women."[1] It is probable that a considerable share of this work was taken over by men, some of whom may have carried it on as a regular trade.[2] There were often many smaller looms in the house on which the women made garters, points, glove-ties, hair-laces, stay-laces, shoe-strings, hat-bands, belts and breeches-suspenders, often called "galluses."[1] The production of these odds and ends of apparel shows in a striking manner the extent to which the household was self-sufficient in its supply of clothing. Knitting was an important branch of the domestic textile industry, producing the hosiery, mittens, shawls, comforters, etc., for all the family. It must be remembered that the foregoing discussion applies only to the conditions prevailing in inland towns. In the seaports and larger river towns, the inhabitants had long used clothing and household furniture of foreign manufacture.

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[1] Report on Manufactures. 1810. p. 435. The note from which this quotation is taken refers to household manufactures in New Hampshire. It is interesting to compare in this regard the figures given by a writer in the Massachusetts Historical Society's Collections, II. 7: 70, for Hillsborough County, New Hampshire. He found 5,490 looms, in a population of 49,282 (about 9,000 families) in 1810. According to Coxe, Digest of Manufactures, 1812, p. 667, in the back-country of Pennsylvania there was in one county, McKean, only one loom among a population of 142 persons. In three other counties the proportion was one to every 20 or 30 of population. The spinning wheels were much more numerous, averaging about one to a family.

[2] Miss Earle says, Home Life, pp. 212–213: "Every farmer's daughter knew how to weave as well as to spin, yet it was not recognized as wholly woman's work as was spinning; for there was a trade of hand-weaving for men, to which they were apprenticed. Every town had professional weavers. They were a universally respected class, and became the ancestors of many of the wealthiest and most influential citizens today. They took in yarn and thread to weave on their looms at their own homes at so much a yard; wove their own yarn into stuffs to sell; had apprentices to their trade; and also went out working by the day at their neighbors' houses, sometimes carrying their looms many miles with them." Miss Earle cites no authorities; the lists of tradesmen given in the statistical accounts of various towns in Connecticut make no mention of weavers, and the only confirmation I have been able to find of her statement is an entry in the account book of Rev. Medad Rogers of New Fairfield, Conn., of money paid out for weaving. See infra, pp. 366-367.

The Building and Furnishing of Farmhouses.

In the furnishings of their homes, the inland farmers relied to a very limited extent on exchange with the world outside their immediate vicinity, and in fact supplied their wants, as in the matter of food and clothing, largely by the exertions of their own families. In the construction of their houses, those story-and-a-half structures with long sloping roofs which one may still occasionally see in the more isolated country regions, they utilized the timber growing in the vicinity, often on their own land, and employed as workmen those of their neighbors who carried on the carpenter's trade as a by-industry of farming.[2] Only a small amount of hardware was used and most of this, such as bolts and hinges, was made by the local blacksmith. The nails, which were used much more sparingly than now, were often made by the farmers themselves from nail rods purchased either from the local store or from a nearby slitting-mill.[3] Glass, which had probably in all except the newest settlements replaced the wooden shutters and oiled paper of earlier times, was practically the only material brought from any distance. The furniture, such as bedsteads, chairs, settles, and tables, could easily be produced by the local cabinet-maker, or even by a skilful carpenter. Besides making the homespun sheets and blankets, quilts and comforters, the women of the family made mattresses and pillows stuffed with the feathers of home-raised geese.[1] An inventory of table-ware and kitchen utensils brings to light only a few "boughten" articles and these were carefully treasured and handed down from parents to children. Wood was the material most used, in fact wherever possible; of it were made trenchers, drinking-cups and tankards, and even spoons. Pewter was also used for these articles to some extent; but china, porcelain, glass or silverware were rarely seen. In the kitchen, wooden and earthenware vessels predominated, pots of iron, brass or copper being comparatively rare.[2]

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[1] Earle, Op. cit., p. 225. A detailed description of the technical processes of hand-weaving as carried on in those days is contained in Chapter X of that work, pp. 212–251. Other chapters which have been consulted are Chapters VIII and IX, pp. 167–211, describing the cultivation and preparation of the flax and woolen fibers.

[2] Supra p. 262 ff. The task of raising the heavy beams which constituted the frame of the structure into position was accomplished by the united efforts of a large number of neighbors. This is another example of the coöperation of inland farmers for the accomplishment of a task now undertaken by specialized workmen, and, like the husking-bee, was utilized as an occasion for social intercourse and amusement.

[3] Supra p. 270. Coxe says: "Nailmaking is frequently a household business in New England, a small anvil being found no inconvenience in the corner of a farmer's chimney." View of the United States, p. 269. In another place he estimates the quantity of nails used by an average household in building and repairing at ten pounds per annum. Ibid. p. 144.

In his Statistical Account of Middlesex County (Conn.), Field states that not only clothing and furniture but also agricultural implements were, at the beginning of the nineteenth century, made by the farmers for themselves.[3] Wood was here again the principal material employed. The tools used by a farmer in Concord, New Hampshire, are thus described: "His plows were mainly of wood, the soles and coulters only being of iron, though the mould-boards were usually plated with sheets of that metal.

"The village blacksmith made his nails, his axes, his chains, as also his clumsy pitchforks, and flat-tined manure forks. . . . His carts and sleds were generally constructed on the farm and ironed by the blacksmith, the wheels of the former having felloes three inches wide, tired with short strips of flat iron. . . . His shovels were mainly of wood, having blades pointed with iron. His harrows, made often of a forked tree, had teeth sometimes of wood and sometimes of iron."[1]

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[1] Woman's work, it would seem, was truly endless at this time. Besides the tasks already enumerated, and such by-industries as the making of soap and candles, they often had the care of poultry or bees, milked cows and did light outdoor work, such as weeding gardens and gathering fruit and vegetables. Combined with the bearing and rearing of large families of children, these unremitting labors shortened the duration of life of the sex very considerably. In frontier settlements extreme illustrations of this fact, were found, such as that cited by Kendall, Travels, III. 130. Near Bath, Maine, he saw a burying-ground in which were the graves of ten married women, eight of whom had died between the ages of twenty-two and thirty years. The "consumption" to which he attributes their early deaths, was, if it existed, no doubt brought on by overwork.

[2] See Earle, Home Life, Chs. III. and IV. Bishop, American Manufactures, I. 488, remarks upon the scarcity of iron utensils at this time. Iron pots, not generally more than one or two, were considered sufficiently valuable to be included in the inventories of estates.

[3] Op. cit., p. 17.

The Versatility and Ingenuity of Yankee Farmers.

Besides these standard by-industries of the farmer, there were a diversity of other tasks to which he applied himself more or less regularly according to his especial "bent" and opportunities. On the seacoast, as we have seen, he was frequently a sailor or a fisherman for part of the year.[2] In inland towns he often plied some trade or other and was classed as an artisan as well as a farmer. Every farmer did a multitude of odd jobs for himself, such as repairing old buildings and building new, laying walls and stoning up wells, butchering pigs and cattle, making axe-handles and brooms, splitting staves and shingles, tanning leather and cobbling shoes. Occasionally he performed some of these tasks for a neighbor, who either had not the requisite skill or was too busy with strictly agricultural operations. Such service was probably more often repaid in kind than in currency. In this way the Yankee farmer acquired a reputation for ingenuity and a moderate ability in a variety of occupations, which has now become proverbial.[3] His ability as a Jack-of-all-trades was not due to any exceptional endowment of versatility. It was distinctly a product of the economic environment and of the persistent endeavors of the New England farmer to adapt himself thereto.[1] The most significant because the most far-reaching feature of that environment was the lack of a market. The problem that confronted the farmer was to get a living for himself and his family, and to get as good a living as he could with the least expenditure of labor. If he had been able to devote all his attention to raising some particular product, with the proceeds of whose sale he could have purchased the services of specialized artisans and goods from abroad, he undoubtedly would have preferred to do so. It would have tremendously increased his efficiency in production, and would have lightened the labors of all the members of his family. But the lack of a market was an insuperable obstacle to specialization and consequently the family group was forced to rely upon itself and upon irregular exchange with other neighboring groups for the necessaries of existence, and to do without, in large measure, the comforts and luxuries.

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[1] Walker, J. B. The Farm of the First Minister. Reprinted from Report of New Hampshire State Board of Agriculture, 1894. Concord, N. H., 1895, p. 18. The importance of wood in the economy of the inland farmer needs no emphasis. It was early recognized by Belknap who devotes a chapter, Ch.VIII., in the third volume of his History of New Hampshire, to an enumeration of the varieties of trees native in that state and discusses the peculiar uses of each.

[2] Chastellux says: "The seaman when on shore immediately applies himself to some handicraft occupation, or to husbandry, and is always ready at a moment's notice to accompany the captain his neighbor, who is likewise frequently a mechanic, to the fisheries." Travels, II. 250.

[3] This quality of ingenuity was recognized by Chancellor Livingston. He says of the farmer of the Northern states: "He can mend his plough, erect his walls, thrash his corn, handle his axe, his hoe, his sithe, his saw, break a colt, or drive a team, with equal address; being habituated from early life to rely on himself he acquires a skill in every branch of his profession, which is unknown in countries where labor is more subdivided." American Agriculture, p. 338.

Commodities Bought and Sold by a Minister-Farmer.

There is not sufficient evidence to warrant even an approximate numerical estimate of the amount of produce which the farmer did actually sell and of the commodities which he received in exchange. Occasionally, however, we come across an account book kept by an inhabitant of one of these inland towns, a farmer, a blacksmith, or a minister, which furnishes a concrete illustration of the small amount of buying and selling which took place. Such an account book is that of the Rev. Medad Rogers, the minister of New Fairfield, Connecticut, a small town on the western boundary of the state.[2] He had the use of a farm of 100 acres and in addition a salary of $100, part of which was, as the accounts show, paid in kind. The accounts extend from 1784 to 1822, but the years in which they were most carefully kept are 1792 and 1793. In the one year and nine months from February 14, 1792, to November 13, 1793, his total purchases amounted to £23, 10 shillings and 11 pence. The items are as follows:

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[1] It may be objected that the tendency to invent is an instinctive activity; that there is, psychologically speaking, an "impulse to contrivance." If this is true, inventive ingenuity must be a general human endowment, not confined to any particular nation or race. But the degree of the manifestation of this "impulse," of its successful realization, its embodiment in practical appliances among any particular people at a given period in their history, must, it seems to me, be largely dependent on the conditions of their economic environment. In the inland towns of New England there was a far greater necessity for the development of this "impulse" than in other less self-sufficient communities. Where, on the small farm, a single family had to devise means to produce the most varied articles for its own consumption, there the opportunities for the application of inventiveness and ingenuity were most numerous, and the advantages to be gained from the use of such talents were most apparent. A consideration of economic and psychological aspects of inventiveness may be found in Professor Taussig's "Inventors and Moneymakers." New York. 1915. Chapter I.

[2] The population was 742 in 1810. The nearest outlet to a market was the Hudson River, from 20 to 25 miles distant.

3 lbs. brown sugar
10 lbs. iron
1 iron pot
1 iron skillet
2 earthern basons
2 chamber pots
1 earthern jug
1 small cream pot
3 milk pans
1½ yards satinet
½ yard everlasting[1]
5 yards coating
1 pair wool cards
1 barlow penknife
1 bbl. linseed oil and paints
1 set pencilled tea dishes and saucers
1 skein holland thread
½ bus. salt
2 lbs. ginger
1 lb. alum
1 gal. rum
1 gal. molasses
7 smoaking pipes
1 yard tobacco

The entries of goods purchased in other years show the same predominance of necessary commodities which could not be produced on the farm. Chief among these were iron, of which in one year he bought 81 pounds besides a bundle of nail rods, and salt, with occasional purchases of molasses and rum. Other entries show purchases of 50 bricks, a pork barrel, six cider barrels, a broadcloth coat and a pair of shoes. The coat and the pencilled tea dishes were refinements of life which probably were considered necessary to the minister's social position and set him apart from the bulk of his parishioners.

The entries of sales are far less numerous. The chief items are dairy products. A rather astonishing sale of 451 pounds of cheese is among them. It went to the local storekeeper and was to be paid for half in cash and half in merchandise. All the other sales were small, such as two and one-half yards of tow cloth, seven pounds of flax, three pounds of butter, a hind quarter of beef and a barrel of cider.[2]

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[1] A sort of cloth.

[2] The account book of the Rev. Mr. Rogers is preserved in the library of the New Haven County Historical Society, New Haven, Conn. A small pamphlet entitled Sundry Prices taken from Ye Account Book of Thomas Hazard, published at the Washington County (Rhode Island) Agricultural Fair Grounds, 1892, contains information of the same sort but for a somewhat earlier date. Hazard was a farmer of South Kingston, Rhode Island.

The Result of Self-sufficient Economy was a Low Standard of Living.

The effect of this self-sufficiency in family and in village life was a low degree of efficiency in the production of wealth in both these economic units. The lack of a market made specialization impossible, there was practically no well defined division of labor except that existing between the sexes. Hence the gains from the adaptation of individual talents to especial tasks, and from the acquisition of skill through continuous repetition of identical movements or processes were almost entirely absent. The farmer who must also be his own tool-maker, carpenter, wheelwright, mason and general handy man could not hope to acquire any great efficiency in agriculture. He had no time to devote to careful experiments in the culture of crops or the breeding of stock, or even to read the books in which the results of scientific investigation were even then recorded. On the other hand, the mason, carpenter, doctor or lawyer who had to interrupt the pursuit of his especial avocation in order to procure food and clothing for himself and his family by means of agriculture, could not hope to develop any great degree of efficiency as an artisan or as a professional man. The result was that the bulk of the population of New England was at this time on what we should now call a low standard of living, and even this standard was supported only by arduous and unremitting toil. One large-minded observer has said: "No mode of life was ever more expensive; it was life at the expense of labor too stringent to allow the highest culture and the most proper enjoyment. Even the dress of it was more expensive than we shall ever see again."[1] The raw materials for food, clothing and shelter were at hand in abundance, but in working up these materials into consumable commodities, the people of those days were at a very great disadvantage. Only when we compare the clumsy and ineffective apparatus with which they worked, such as the old-fashioned Dutch oven and the open fireplace, the spinning wheel and the handloom, with the modern cooking appliances and the power-driven spinning frames and looms, can we appreciate to some extent how "expensive" their life really was.

The Contrary Opinion Held by Travelers.

How, then, can we explain the general impression of comfort and ease in getting a living which seems to have been made upon contemporary observers? Numerous passages might be cited from the travelers who passed through New England from the close of the

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[1] Bushnell, Horace. The Age of Homespun, p. 393.

Revolution up to 1810, praising the beauty and ease of the life of the rural population. A quotation from Dwight is typical. In a chapter on the Mode of Living of New Englanders, he says: "The means of comfortable living are in New England so abundant, and so easily obtained as to be within the reach of every man who has health, industry, common honesty, and common sense."[1] In another passage he uses such phrases as "comfortable subsistence," "universally easy circumstances," and "universal prosperity,"[2] in describing the life observed in his travels. Surely such expressions do not describe an especially arduous existence; far more do they remind us of the descriptions of that land flowing with milk and honey, the Promised Land of the ancient Hebrews. The apparent lack of agreement between such opinions and the conditions which we have described in this chapter may be explained by a number of considerations. In the first place, we must remember that the standards of measurement used by the writers of that time were not those of today. When they said that living in New England at that time was easy or comfortable, they did not mean absolutely so, but in comparison with conditions of life in some other country, or in New England at some former time. The conditions with which they were most familiar and which they undoubtedly used as a standard of comparison were those of frontier life in this country and of the common people of Europe in the eighteenth century.[3] Judged by either of these standards, life was easy and comfortable; judged by our standards, however, it was far different.

Then, again, we must take into account the fondness of all literary travelers, and President Dwight was no exception, for sweeping generalizations and large, well-sounding, mouth-filling phrases. For the economic historian a few bits of specific information are worth far more as evidence and should be given credence when they are in conflict with the former. Considerable of this specific evidence has been given in previous sections of this chapter.[4] Even if, however, their generalizations were carefully drawn from all the evidence presented, we must inquire whether the conditions observed were typical of those prevailing over New England as a whole, or whether the observations were limited to some particularly favored regions. As a matter of fact, we know that but very few of the travelers through New England left the beaten track of the stage-coach routes from New York to Boston. They came up to New Haven along the shores of the Sound. There they had a choice of routes; they either continued along the shore to Newport and Providence, and thence across Bristol, Plymouth or Suffolk Counties to Boston, or branching off to the north-east to Hartford and then following the Connecticut Valley up to Springfield, they turned due east and reached Boston by way of Worcester. Except for the stretch between Springfield and Worcester, both of these routes passed through towns which were favored by exceptional opportunities for trade and often, as, for instance, the towns in the Connecticut Valley, by especially fertile soil as well. It is no wonder that travelers' conclusions, based on this sort of selected evidence, were so favorable.

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[1] Travels, IV. 341.

[2] Ibid., I. xv.

[3] As a matter of fact, we find these comparisons specifically made. See Dwight, Travels, II. 254, and American Husbandry, I. 70.

[4] See supra pp. 355–365. Such a seemingly unimportant point as the use or lack of shoes and stockings by country people has significance. There is abundant evidence that they did not feel they could afford these articles except as protection against the cold and for especial occasions, such as the Sunday religious services. See Wansey, Journal, p. 71; Harriott, Struggles through Life, II. 54; Larned, History of Windham, II. 388–389; New Hampshire Historical Society Collections. 10 vols. 1824–1893. Vol. V. (1837), pp. 226–227.

Wealth was Equally Distributed.

Perhaps another explanation of the optimistic strain, so habitual in travelers' descriptions of economic conditions prevailing in New England at this time, is that they mistook equality in the distribution of wealth for ease in production. That the two ideas were closely connected in their minds is evident. Lambert, for instance, says of the inhabitants of the central part of Connecticut: "The generality of the people live in easy independent circumstances; and upon that footing of equality which is best calculated to promote virtue and happiness among society."[1] Of the inhabitants of Hampshire County, Massachusetts, Dwight says: "They are also, as a body, industrious and thriving, and possess that middle state of property, which so long, and so often, has been termed golden; . . . . Few are poor, and few are rich."[2] In another place the same author remarks: "Great wealth, that is, what Europeans consider as great wealth, is not often found in these countries. But poverty is almost unknown."[3]

[1] Travels, II. 304.

[2] Travels, II. 254.

[3] Ibid. I. xv.

Agriculture was not a Means of Making Money.

Equality in distribution would, under the circumstances, naturally be expected. The lack of a market meant production by each family or village unit simply for its own consumption. "The house was a factory on the farm, the farm a grower and producer for the house."[1] Except in especially favored regions, agriculture was not a commercial business; there was practically nothing raised for sale. Hence the opportunities for business profits, for the accumulation and investment of capital, all of which are necessary steps in the development of inequalities in wealth, were lacking.

The conditions of land tenure and the uniformity in the size of the farms are both proofs of this contention. It is well known that almost every farmer owned his own land, tenancy being found in only a few localities.[2] The farms varied in size from 80–100 to 250–300 acres, few having less than 100 acres and few more than 200.[3] Occasionally we find instances of families in the older inland towns distinguished from their neighbors by the possession of considerable estates in land,[4] enabling them to have more of the refinements and comforts of life and even some of its luxuries. Such instances, however, were exceptions to the general rule of plainness and frugality.

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[1] Bushnell, The Age of Homespun, p. 392.

[2] Dwight found some tenancy on the Connecticut coast, east of New London. In Stonington, for instance, he found about half of the farms cultivated by tenants, who were, however, in that position only until they could obtain enough capital to purchase land for themselves. Travels, III. 16. See also Tudor, Letters from the Eastern States, p. 406.

The practice of holding land in common, at least pasture lands, which was often introduced at the settlement of a new town, seems to have died out in most localities before the Revolution. In Ridgefield, for instance, the common lands were divided in 1760. Goodrich, Statistical Account, p. 9. See also Doyle, J. A., English Colonies in America. 5 vols. New York. 1882–1907. Vol. V. p. 16. The practice seems to have survived longest, in the Island of Nantucket and in Plymouth and Barnstable Counties in Massachusetts. See Kendall, Travels, II. 208–210; also Adams, H. B., The Germanic Origin of New England Towns, Ch. II.; and Village Communities of Cape Anne and Salem, Chs. IX. and X.; both in Vol. I. of Johns Hopkins University Studies in History and Political Science.

[3] For a fuller discussion of this point and authorities see supra pp. 321–322.

[4] The author of American Husbandry writes, Vol. I. p. 62, as if the English system of cultivation by tenant farmers of land of large proprietors was not an uncommon thing in southern New England before the Revolution. Such a system may have prevailed occasionally in regions of active internal trade (as in Windham County, Conn., see Larned, History of Windham County, II. 270, and Kendall, Travels, I. 315), but there is no evidence that it existed throughout isolated rural communities.

Land was Cheap, Hence no Class of Wage-Earners.

And yet the acquisition of a moderate amount of land was not a matter of any great difficulty. Tudor writes: "Every industrious man may look forward with certainty to becoming proprietor in fee simple of a small farm."[1] This ease with which land could be acquired was one of the principal causes of the prevailing equality in the distribution of wealth, and in fact, with the lack of a market, was a factor determining the whole character of the economic life of the population of New England at this time. In the first place, it brought about that phenomenon of high wages which was so often commented upon by travelers and other observers, native and foreign.[2] It was naturally hard to persuade a young man to work for day-wages when he could so easily establish himself as an independent farmer. This fact, together with the lack of a market, effectually prevented the rise of a body of agricultural laborers. Even in regions where a market was accessible it was difficult, at what were then considered extravagant wages, to obtain a labor force for commercial farming.[3] In other districts there was little demand for such labor. The self-sufficient farm furnished its own labor force, the farmer and his sons being in most cases quite well able to raise the crops and to care for the live stock which provided food and clothing for the family.[4] It would indeed have been poor economy to hire laborers to raise a surplus which could not be sold. Exceptional tasks were accomplished by the voluntary coöperation of neighbors. Occasionally a farmer's son would hire out for a few years to a neighbor, but such service was always looked upon as temporary, as merely a means of accumulating sufficient capital to establish the young man as an independent farmer. And just as among the independent artisans in the country towns there was no regularly defined, permanent body of hired workmen, so also there was no class of agricultural laborers.[1]

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[1] Letters on the Eastern States, p. 405.

[2] These observations were in many cases concerned with the difficulty or impossibility of establishing manufactures in the colonies or, later, in the states. See Franklin, Benjamin. Canadian Pamphlet, in Works, Sparks edition, IV. 19, 40–41. Also American Husbandry, II. 257–267.

[3] Harriott, Struggles through Life, II. 193–194, tells of his unsuccessful efforts to get laborers to work on a farm on Long Island.

[4] Livingston, American Agriculture, p. 338, says: "Most of our farmers cultivate their farms with their own hands, aided by their sons when of proper age to be serviceable. Women labor in the harvest, and in haying, and in planting corn, before they are mothers, but seldom afterwards." See also Dickinson, Geographical and Statistical View, p. 8.

Paupers—Cost of Poor Relief—Causes of Poverty.

These facts, showing the wide distribution of the ownership of land, and the resulting lack of a permanent labor class, lend support to the general statements of contemporary writers concerning the equality in the distribution of wealth. They would seem, also, to lead naturally to the inference that there could have been little if any extreme poverty and little need for poor relief in these inland towns. Such an inference would be, however, not strictly in accord with the facts. Poverty did exist and the sums appropriated each year by the towns for the support of the paupers were large as compared with the other items in their budgets.[2] This poverty, however, was of a different sort from that to which we are accustomed nowadays. It was not primarily, nor to as great a degree as at present, due to economic pressure, or to maladjustments in the industrial system. It was comparatively easy for any able-bodied person of energetic disposition and temperate habits to earn a tolerable subsistence. The paupers of that time included principally that class of persons whom we now class as unemployable; the mentally or physically incapable, the insane and the feeble-minded, the cripples, the orphans and the aged. There were no insane asylums, orphanages, homes for incurables or for old persons; consequently these unfortunates, if no relatives were present who were able or willing to support them, fell on the town for support. And besides these there were those who had become enslaved to the current vice of drunkenness.[1]

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[1] Tudor says of "the hired people," Letters on the Eastern States, p. 405: "These latter were seldom born, and seldom died, servants; they served for a time, till their wages would enable them to begin clearing land for a farm." Dwight, also, has a significant paragraph on the character of the labor force in New England. He says: "We have in New England no such class of men as on the eastern side of the Atlantic are denominated peasantry. The number of those, who are mere labourers, is almost nothing, except in a few populous towns; and almost all these are collected from the shiftless, the idle, and the vicious. A great part of them are foreigners. Here every apprentice originally intends to establish, and with scarcely an exception actually establishes himself in business. Every seaman designs to become, and a great proportion of them really become, masters and mates of vessels; and every young man hired to work upon a farm, aims steadily to acquire a farm for himself, and hardly one fails of the acquisition." Travels, IV. 335.

[2] In the six towns of Middlesex County, Conn., the expense of poor relief varied from $400 to $1,700 in 1814, amounting on the average to a per capita tax of $0.366 (Field, Statistical Account of Middlesex County, p. 23); in Litchfield, Conn., there were 38 paupers in a population of 4,500, whose annual support cost $1,500 in 1811. (Morris, Statistical Account of Litchfield, p. 107.) The figures quoted by Adams, Episodes, II, 729, 912–913, for Quincy, Mass., seem quite exceptional. Here the expense of the poor increased from $1,000 in 1812 to $1,665 in 1813, being equal at the later date to the combined appropriations for the church and the schools. During the six years 1808–1813 the total amount of taxes raised in this town was $18,200 and of this over one-third went for poor relief. The population of this town was 1,300 in 1810. In the town of Kingston, in the same county (population 1,300 in 1810), the expense of poor relief averaged only $600 at this date. Mass. Hist. Soc. Coll., II. 3: 215.

In interpreting these figures allowance must be made for the expensive practice of farming out the town poor, which regularly prevailed. Only in the largest towns, such as New Haven and Middletown in Connecticut, had almshouses been erected. The best contemporary description of the various methods of poor relief employed is found in Field, Op. cit., pp. 22–24.

The Vice of Intemperance—Its Causes.

"The intemperance of the colonial period," says Charles Francis Adams, "is a thing now difficult to realize; and it seems to have pervaded all classes from the clergy to the pauper."[2] We have already remarked the large consumption of cider in the farmers' families and have commented upon the importance of the retail sale of stronger liquors in the business of the country stores and taverns. Every important occasion in home or church life, every rural festivity was utilized as an opportunity for generous indulgence in intoxicants. Neither the haying-season in early summer, nor the hog-killing season at the end of autumn could be successfully managed without the aid of liberal potations of "black-strap" and "stone-wall." Husking bees, house-raisings, training days, and even christenings, burials and ordinations were often disgraced by the drunkenness of participants.[3]

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[1] The Rev. Mr. Goodrich wrote of the town of Ridgefield: "The number of poor who receive aid from the town do not excede 10 or 12 of which number 2 or 3 receive their whole support. . . . we have no poor that are chargeable but what become so by bodily imbecility." Statistical Account, p. 17. On this point Tudor wrote: "There are few persons here, who can suffer absolute distress from poverty. That which arises among the wealthier classes, from great reverses, I am not considering; but an uncertainty about the common means of subsistence can never happen in the country, except to the miserable drunkard, or the unfortunate victim of some bodily or mental infirmity, who of course are supported by the public when destitute of friends; the labouring man, with good health and good habits, may always obtain the comforts of life, and increase his savings." Letters on the Eastern States, p. 407.

[2] Episodes, II. 785.

[3] See Adams, Episodes, II. pp. 783–794. The annual numbers of the Old Farmer's Almanack are full of admonitions against drunkenness. See also Harriott, Struggles through Life, II. 205–206.

The craving for stimulants with its disastrous results on the fortunes of individuals and on the general moral tone of the community proceeded partly from the coarse and unvaried diet of the farming population, and probably to a larger extent, from a desire to relieve at least temporarily the dreary monotony of village life. There are always two opposing views current among the older generation concerning the relative virtues of their early days as compared with the conditions which they see about them in their declining years. Some look back to a sort of Golden Age and view all the features of the past through rose-colored spectacles. Others with a more optimistic frame of mind are quite willing to admit that the passage of the years has brought improvement along many lines and do not hesitate to glory in the progress that has been achieved under their eyes during a long life. One of the best sources of information concerning the character of social life in the inland towns a century ago are the memorial discourses delivered upon the centennial and other anniversary celebrations of the inland towns and of their churches. In these discourses we find both of the opposing views presented. There are probably elements of truth in both, but as far as the general features of social life are concerned and their effect in stimulating or in depressing the individual, the latter view seems to be more in accord with the facts as we know them.

The Rev. Mr. Storrs, in reviewing a pastorate of fifty years in the town of Braintree, Mass., said: "And when it is remembered that fifty years ago, and for many after years, no post office blessed the town, nor public conveyance for letters, papers, or persons, was to be had, even semi-weekly, except through villages two miles distant; that but for the occasional rumbling of a butcher's cart, or a tradesman's wagon, the fall of the hammer on the lap-stone, or the call of the plowman to his refractory team, our streets had well nigh rivaled the graveyard in silence, it can scarcely surprise one, that our knowledge of the outer world was imperfect, nor that general intelligence and enterprise was held at a discount; and if powder, kettle drums, and conch-shells, proclaimed the celebration of a wedding; or if wine, and 'spirits more dangerous than any from the vasty deep,' were imbibed at funerals to quiet the nerves and move the lachrymals of attendants; or if rowdyism and fisticuffs triumphed over law and order on town meeting, muster and election days, ... it was but the legitimate outflow of combined ignorance and heaven daring recklessness. Those days are passed and shame throws its thick mantle over them."[1]

Tendencies Toward Social Degeneration.

An isolated community always tends toward social degeneration, and the drunkenness, rowdyism, and general coarseness of manners of the inland towns at this time were but premonitions of the more disastrous results which might be expected from economic and social stagnation. At no time in these communities was there a distinct criminal class, of the type now technically known as degenerate; but petty crimes, stealing, assaults and disturbances were of frequent occurrence.[2] There are many indications that the influence of the church was decadent. Up to the beginning of the nineteenth century, the ecclesiastical organization had secured, by means of a censorship of the private life of its members so inquisitorial as to seem nowadays intolerable, fairly submissive adherence to a rigid code of morality. With the decline in the authority of the church in matters of doctrine came also a weakening in its control over the conduct of its adherents.[3]

Another cause of laxity in morals, of probably greater importance, was the general spirit of lawlessness spreading over the country after the Revolution, which seems especially to have affected the country districts. The soldiers returning from the war found it hard to settle down and get their living honestly in the previous humdrum routine. They brought back with them new and often vicious habits which the rest of the community imitated. Then, in the interval between the overturn of the regularly constituted colonial authorities and the establishment of the national government under the new federal constitution, there was a period of semi-anarchy, when obedience to any sort of law was difficult to enforce. The disrespect for authority in both church and state which arose from these conditions could not fail to have a distinctly bad influence on the moral conditions in inland towns. In the disturbances of those days the inland farmer was generally to be found on the side of rebellion, and active in opposing a reëstablishment of law and order.[1]

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[1] Fiftieth Anniversary of the Ordination and Settlement of Richard S. Storrs, D.D., Pastor of the First Congregational Church in Braintree, Mass. July 3, 1861. Boston, 1861. pp. 32–33.

[2] The records of the town courts, where accessible, are a rich source of evidence on this point. See Wood, Sumner Gilbert. The Taverns and Turnpikes of Old Blanford, pp. 188–205.

[3] Dwight, Travels, IV. 380, writes: "Crimes, to a considerable extent are now practised, avowed, and vindicated, are made the materials of a jest, and gloried in as proofs of ingenuity and independence, which our ancestors knew only by report, and of which they spoke only with horror. Inferior deviations from rectitude are become extensively familiar, and regarded as things of course." The cause which the writer ascribes for this state of things is the growing spirit of infidelity. He adds: "From these and other causes, we have lost that prompt energy in behalf of what is right, and that vigorous hostility to what is wrong, which were so honourable traits in the character of those who have gone before us." (p. 381).

Virtues of the Age of Homespun.

Too much emphasis must not be laid upon the dark features of the community life of these times. Undoubtedly there were many advantages arising from the homogeneous construction of society, from the uniformity of the inhabitants in race, religion and manners, and from the absence of class distinctions based on differences in wealth. The inland villages were by no means entirely lacking in opportunities for helpful and stimulating social intercourse; but it was from the home rather than from the community life that the principal virtues of the agricultural population, of which their descendants have been so justly proud, were chiefly derived. First of all, no child could grow up in the self-sufficient household of those days without being thoroughly trained in habits of frugality and economy. In his sermon, "The Age of Homespun," Horace Bushnell wrote: "It was also a great point, in this homespun mode of life that it imparted exactly what many speak of only with contempt, a closely girded habit of economy. Harnessed, all together, in the producing process, young and old, male and female, from the boy that rode the plow-horse, to the grandmother knitting under her spectacles, they had no conception of squandering lightly what they had all been at work, thread by thread, and grain by grain, to produce. They knew too exactly what every thing cost, even small things, not to husband them carefully."[2]

This frugality did at times develop into meanness, but not necessarily so; and whatever tendencies may have existed in this direction were to a certain degree offset by another characteristic which such households and such communities developed, that of mutual helpfulness. In a community where the services of the specialized professions to which we are accustomed, such as those of the trained nurse or of the funeral director, for instance, were entirely lacking, the deficiency was made up by the voluntary offices of neighbors. It was turn and turn about. Such services were rarely if ever paid for, but the understanding was that the person or family receiving the service stood ready to render similar services willingly when occasion should arise. The practices of neighborly coöperation in the extraordinary tasks of farm labor, such as in raising buildings and in "changing works" of all sorts; the custom of parceling out portions of slaughtered animals so as to equalize consumption and decrease waste; all these arrangements were, we have seen, direct results of the farmers' necessity of adapting themselves to the self-sufficient conditions of their life. Indirectly, a helpful and neighborly spirit was stimulated.

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[1] Take, for instance, Shay's Rebellion in Massachusetts, 1786–1787. See Fiske, John. The Critical Period in American History. Boston. 1898, pp. 192–198.

[2] Work and Play, p. 395.

Educative Effects.

In its educative effects the self-sufficient household produced certain results which the more formal training of our modern homes and schools has never been able to approximate. In the first place, it inculcated habits of self-reliance and an ability to bear responsibility. In large families where the various tasks of the house and farm were apportioned to each member of the family according to his strength and ability, even the little children were taught early that for the performance of their particular tasks they were to be strictly accountable. It was a hard discipline often, and perhaps it developed too early a serious way of taking life, but under proper control it evolved a race of men strong and independent.

The Importance of the Mechanical Ingenuity of the Yankee Farmer in the Future Industrial Development of New England.

We have already spoken of the mechanical ingenuity of the Yankee farmer. It arose just as immediately as these other characteristics from the necessities of getting a complete living from the products of a single farm, and from the lack of any clearly marked division of labor in the rural communities.[1] Of the many contributions of the

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[1] It may be objected that there have been many cases of isolated communities whose inhabitants have not shown themselves especially ingenious along mechanical lines. Instances coming readily to mind are the Boers of the Transvaal and the mountaineers of eastern Tennessee. But it will be found that such communities were in many important respects not comparable with the towns of southern New England. Although suffering under the same inability to export foodstuffs, and consequently feeling the same necessity of making use of ingen-

Age of Homespun to the future industrial development of New England, this characteristic of mechanical ingenuity was perhaps the most important. The stage of self-sufficiency was in many ways a period of preparation for the coming era. The land had all been cleared and settled; a considerable amount of capital had been accumulated in the commercial towns, ready for investment in new enterprises which might prove more successful than commerce; stable and efficient legal and political institutions had been organized; and finally the population had been trained in habits of frugality, economy and industry. But it was the presence of inventive ingenuity which seems to have aided the growth of manufacturing in New England more than any of these. The ability to devise a means to an end; to invent and perfect all sorts of tools and appliances, was originally turned to account only in more efficiently supplying the needs of the household or the surrounding community. When, however, the growing prosperity of the cotton planters in the Southern states opened a market for manufactured goods; when the ingenious farmer-mechanics of the inland towns of southern New England learned that they could get a living, and a much better living than that derived from agriculture by the sale of the fruits of their skill over a wide area, then this inventive ingenuity became utilized in the establishment and development of numberless enterprises and showed itself as a most valuable asset in industrial progress.

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ious contrivances in satisfying their own wants, these three communities differed widely in the advantages of education, of communal life and perhaps also in the inborn qualities of their people. Neither the colonists of the South African republic, nor the rural folk of the Tennessee mountains enjoyed the widespread common-school education with its consequent high level of intelligence, nor the close association in village communities, both of which must have favored the development of intellectual talents of all sorts,—among them inventiveness,—among the Yankee farmers. It may be also that the original settlers of New England, coming as they did largely from urban districts in the mother country, transmitted to their descendants a superior knowledge of the technical processes of the ordinary crafts, and perhaps certain favoring physiological and psychological characteristics.

More important than these considerations, in my opinion, is the fact that the commercial isolation of the New England towns was not as complete as that of the other two communities mentioned. For their foodstuffs, the farmers of the inland towns of southern New England had practically no market. For small manufactured wares, however, there was a market in the coast towns and in the Southern states. Consequently in the production of wooden-ware and tinware, of hats and shoes, of buttons, clocks and other Yankee notions for these markets, opportunity was given for the full fruition of that mechanical ingenuity which germinated in the favoring atmosphere of the self-sufficient farms.

The Home Market.

With the growth of manufactures in the inland towns of southern New England came the rise of a specialized non-agricultural population and a market for the farmer was created, not far away in the Southern states or in the West Indies, but right at home, often in his own town. And thus came to an end the Age of Homespun, the era of commercial isolation. It was not a change accomplished in a single decade; in many out-of-the-way villages conditions remained practically constant until 1840 or 1850; but in 1810 an era of change had set in. From that time to the Civil War an Industrial Revolution was in progress, comparable in scope and in its effects to that which had preceded it by a half-century in England.

APPENDIX A.

Population Statistics of Southern New England. 1810.

Table I.

Population by States.

Massachusetts	*472,040
Connecticut	261,942
Rhode Island	76,931
Total	810,913

* Not including Maine.

Table II.

Population in Towns Grouped According to Size.

	NO. TOWNS IN GROUP	POPULATION OF GROUP	PER CENT OF TOTAL POPULATION
Group A. Towns over 10,000	3	56,000	6.90
Group B. Towns 5,000–10,000	11	68,500	8.45
Group C. Towns 3,000– 5,000	38	141,800	17.50
Group D. Towns under 3,000	385	544,700	67.15
Total, all groups	437	811,000	100.00

Table III.

Population of the Towns in the Various Groups.

Group A.

Boston, Mass.	33,250
Salem, Mass.	12,673
Providence, R. I.	10,071

Group B.

New Bedford, Mass.	5,651
Gloucester, Mass.	5,943
Marblehead, Mass.	5,900
Newbury, Mass.	5,176
Newburyport, Mass.	7,634
Nantucket, Mass.	6,807
Bridgewater, Mass	5,157
Hartford, Conn.	6,003
Middletown, Conn.	5,382
New Haven, Conn.	6,967
Newport, R. I.	7,907

TABLE III—*Continued.*

Group C.

Barnstable, Mass.	3,446
Dartmouth, Mass.	3,219
Rehoboth, Mass.	4,866
Taunton, Mass.	3,907
Andover, Mass	3,164
Beverly, Mass.	4,608
Danvers, Mass.	3,127
Ipswich, Mass.	3,569
Lynn, Mass.	4,087
West Springfield, Mass.	3,109
Charlestown, Mass.	4,959
Roxbury, Mass.	3,669
Middleborough, Mass.	4,400
Plymouth, Mass.	4,228
Scituate, Mass.	3,000
Brookfield, Mass.	3,170
Chatham, Conn.	3,258
Danbury, Conn.	3,606
East Hartford, Conn.	3,240
East Windsor, Conn.	3,081
Fairfield, Conn.	4,125
Greenwich, Conn.	3,553
Groton, Conn.	4,451
Guilford, Conn.	3,845
Litchfield, Conn.	4,639
Lyme, Conn.	4,321
New London, Conn.	3,238
New Milford, Conn.	3,537
Norwalk, Conn.	3,000
Norwich, Conn.	3,528
Preston, Conn.	3,284
Saybrook, Conn.	3,996
Stamford, Conn.	4,440
Stonington, Conn.	3,043
Wethersfield, Conn.	3,961
Warwick, R. I.	3,757
Smithfield, R. I.	3,828
South Kingston, R. I.	3,560

APPENDIX B.

EMIGRATION FROM THE INLAND TOWNS IN SOUTHERN NEW ENGLAND.
1720–1820.

Shifting of Population Within Southern New England—1720–1775.

There had been a steady expansion of population in Massachusetts from the oldest settlements on the coast toward new lands to the westward, until by 1720 all the best land east of the Connecticut Valley had been occupied. The new home-seekers wanted not only land but good land; hence many parts of Worcester County were left unsettled until a later period.[1] In Connecticut the oldest settlements along the Connecticut River at Hartford, Windsor and Wethersfield, and the colony at New Haven, had radiated their surplus in all directions. Before 1720, however, most of the emigrants from these original settlements had gone to the east and the north where they met the settlers from Massachusetts and filled up the townships in Windham, Tolland and New London Counties. About 1720 or 1730 the pressure of population began to be felt in this region, too, and the tide of emigration swung to the west and northwest. Litchfield County in Connecticut then became the destination of the surplus. So we find in the years 1719–1721 families from Lebanon joining with those from Hartford and Windsor in settling the new town of Litchfield.[2] A similar instance of the joining of the streams of emigration from the newer eastern towns with those from the first settlements is found in the settlement of Sharon by families from Colchester and Lebanon together with families from New Haven.[3]

The Connecticut emigrants did not, however, remain in Litchfield County until all its lands had been taken up, but following along up the Housatonic Valley, they invaded the new lands in Berkshire and Hampshire Counties in western Massachusetts, meeting there the families arriving from eastern Massachusetts, as well as some Dutch emigrants from New York. Se we find in the town of Wales settlers from Salem, Palmer and Grafton in Massachusetts and from Windham, Tolland and Union in Connecticut. In New Marlborough emigrants from Northampton and Dedham in Massachusetts met with those from Canterbury and Suffield in Connecticut; in Sandisfield the colonists were from Enfield and Wethersfield and from Cape Cod towns.[4] In this early colonization Rhode Island seems to have taken little part. It had but a little over 7,000 people in 1708, and although much of its soil was unfertile, yet its commercial interests were so prosperous in this period that it succeeded in retaining nearly all of its natural increase. Consequently its population increased very rapidly, amounting to over 40,000 in 1755.[1]

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[1] See Mathews, Lois Kimball. The Expansion of New England. Boston, 1909. p. 79.

[2] Ibid. p. 92.

[3] Pease and Niles, Gazetteer, p. 261. This settlement was made in 1738–1739. From Durham, in Hartford County, settlers went to Torrington in 1737. See Fowler, W. C., History of Durham. Hartford, 1867, p. 209. This town lost so steadily by emigration that its population increased from 1,076 in 1774 to only 1,101 in 1810.

[4] Mathews, Op. cit., pp. 79–80.

Beginning of Movement to Northern New England.

In 1760 emigration began in earnest to lands outside the borders of the states of southern New England. The fall of Quebec in 1758 brought the war between England and France in this country practically to an end. With the fear of hostile attack, especially from the Indians, thus removed, large numbers of settlers began to move into the northern states. In New Hampshire, between 1760 and 1775, one hundred new towns were planted by colonists from Massachusetts, Rhode Island and Connecticut. In Maine, ninety-four towns were founded between 1759 and 1776, principally by settlers from Massachusetts. In Vermont in the same period seventy-four new towns were settled.[2] Connecticut people went in great numbers to new homes along the upper valley of their great river, often giving the new town the name of the old home from which they had come. In Vermont alone there are now forty towns whose names repeat those of Connecticut.[3]

Even before the Revolution, the Delaware and Susquehanna companies had been organized in Connecticut and had conveyed hundreds of families from that state to new lands in northeastern Pennsylvania. The craze for emigration had led to an ill-fated attempt of some four hundred families from towns on the Connecticut River to colonize lands on the Yazoo River in Mississippi. A temporary check to the outward movement is observable during the Revolution. Even before the conclusion of peace, however, a veritable rush of emigration began to new lands in the West, in New York state and in Ohio.[4] In Pease and Niles' description of Connecticut we read: "The spirit of emigration which has prevailed so extensively in this State, disclosed itself previously to the Revolutionary war; emigration at this period being directed to the present counties of Dutchess and Columbia, in the State of New York, and the counties bordering upon Connecticut River in the State of New Hampshire. After the war, the spirit of emigration revived, and was principally directed to the western section of New Hampshire, and the territory now comprising the State of Vermont; a large proportion of the original inhabitants of these sections of our country being from Connecticut. Within the last thirty years (written in 1819), the current of emigration from this State has swelled to a torrent, and has been directed principally to the westward."[1] This movement continued in great volume until checked, temporarily, by the growth of manufactures in the decades after 1810.

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[1] Censuses were taken in Rhode Island in 1708, 1730, 1748, 1755, 1774, 1776, 1782. These were all reprinted in the Report on the Census of Rhode Island, 1865. Prepared by Edwin M. Snow, Providence, 1867, p. xxxii.

[2] These facts are from Mathews, Expansion of New England, pp. 108–115.

[3] See Memorial History of Hartford County, I. 203.

[4] The inland newspapers such as the Massachusetts Spy, the Windham Herald, the Pittsfield Sun, and the Litchfield Monitor contain regularly advertisements of lands for sale in New York, Pennsylvania, Virginia, and Ohio in the years 1800–1810. The advertisements of farms for sale in the New England towns in which these papers were printed, show the process of exchange of old for new land which was taking place.

Volume of Emigration Shown by Early Census Figures.

The results of this wholesale movement of people are observable in a comparison of early census figures in the states of southern New England. In Connecticut the earliest census was taken in 1756.[2] It gave the total population of the colony as 129,925 persons. At the next census, 1774,[3] this number had increased to 197,872, showing a growth of 52 per cent in eighteen years, a decennial rate of increase of 29 per cent. If we assume that population was in reality increasing at this period at a rate very near the physiological maximum, that is, doubling itself every twenty-five years, we may take the "natural"rate of increase to have been about 40 per cent in each decade. This would lead us to believe that even at that early date the state was losing about 11 per cent of its decennial increase.

The same state of affairs prevailed in Rhode Island. From 1708 to 1755 the increase was very rapid, as we have seen, averaging about 107 per cent per decennium. In the years 1755 to 1774 the population increased from 40,414 to 59,707, or at a decennial rate of 25.1 per cent.[4] Emigration was evidently taking place from this state in even greater volume than from Connecticut.

Massachusetts was increasing in this period more rapidly in population than either of her neighbors. Although she did not retain a larger proportion of her own annual increase, yet her loss from emigration was very nearly offset by her gains from the states on her southern borders. In 1764 the population of this state was 201,984;[5] and in 1784 it was 346,653.[6] The increase in these two decades was 71.6 per cent, or 35.8 per cent in each ten years.

After the Revolution.

A striking contrast is presented by an examination of the growth of population in these states after the Revolution. As we have seen, it was then that the emigrants from the older towns tended to push on beyond the boundaries of their own states and to settle in Northern or Western states. We are not surprised, therefore, to find that the population of Connecticut increased but 20.2 per cent in these sixteen years, at a decennial rate of 12.6 per cent, and that Rhode Island gained but 15.3 per cent in the same period, 9.6 per cent per decennium. In Massachusetts emigration was about as great in proportion to its population, for in the six years, 1784 to 1790, it increased but 9.3 per cent, or at a decennial rate of 11.6 per cent. Taking the combined figures for Rhode Island and Connecticut, we find that before the Revolution the population of these states was increasing at the rate of 28.4 per cent in each decade; after 1774 until 1790 the increase was only 11.9 per cent per decennium. This slackening in growth seems to have been due principally if not entirely to the increased emigration. The statistics for Massachusetts agree in general with these figures.

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[1] Gazetteer, p. 11.

[2] Contained in Conn. Col. Public Records, Vol. XIV, p. 492.

[3] Ibid. pp. 485–491.

[4] These figures are from Snow, Census of Rhode Island, pp. xxxii.

[5] This census is reprinted in A Century of Population Growth, pp. 158–162.

[6] This figure is estimated by Dr. Chickering from the number of rateable and non-rateable polls returned by an enumeration in that year. See Chickering, Jesse. A Statistical View of the Population of Massachusetts from 1765 to 1840. Boston. 1846, p. 10.

The continuance of emigration in the years 1790–1820 may be observed in the slow rate of growth of southern New England as compared with the increase of population throughout the United States.

TABLE I.[1]

	1790	1800	1810	1820
Massachusetts..........	378,787	422,845	472,040	523,287
Connecticut............	237,946	251,002	261,942	275,248
Rhode Island...........	68,825	69,122	76,931	83,059
Total.................	685,558	742,969	810,913	881,594

The increase per cent in each decade was as follows:

TABLE II.

	1790 TO 1800	1800 TO 1810	1810 TO 1820
	per cent	*per cent*	*per cent*
Massachusetts.....................	11.6	11.6	10.9
Connecticut.......................	5.5	4.4	5.1
Rhode Island......................	0.0	11.3	8.0
Southern New England..............	12.8	9.1	8.7
United States.....................	35.1	36.4	33.1

Statistical Estimate of Emigration, 1790–1820.

So great had this colonizing movement become by 1810 that a number of attempts had been made to estimate statistically its amount.[2] The method usually adopted was the application to these states of the rate of increase observed over the United States as a whole. Thus a figure was obtained which represented the population which these states would have had, had there been no emigration. The total increase in population throughout the country in the years 1790–1820 was 145.6 per cent. There seems no reason for believing that the natural increase was any less in southern New England than elsewhere. Certainly with such an outlet for surplus population as emigration afforded, and with such a readiness to emigrate as the inhabitants of these states displayed, there could have been but slight operation of any preventive check. Nor does it appear that the death rate was any higher here. In fact, the conditions were far more favorable for the survival of children than on the frontier. If we may assume that the population of Massachusetts, Rhode Island and Connecticut did increase by 145.6 per cent in the years 1790–1820, then, had there been no emigration, the census of 1820 would have shown a total for the three states of 1,681,673 persons. As a matter of fact this total was only 881,594. Consequently according to this computation the loss by emigration in the thirty years must have been 800,000 persons.

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[1] These figures are from the Abstract of the 13th U. S. Census, pp. 24–25. As in all other computations in this essay, the figures for Massachusetts do not include the population of the District of Maine.

[2] As in Burdick, William. The Massachusetts Manual. Boston. 1814. I. 179; and in Blodget, Economica, p. 79.

Economic Aspects of Emigration—Agricultural Regions Lost Most Heavily.

For the purposes of this essay our interest in this movement of population is centered in its relations to the economic conditions prevailing in the country towns. Is there any evidence to show that the purely agricultural inland regions were affected more or less than those on the rivers and on the coast? If so, what light do these differences shed on the causes of emigration?

There is an abundance of evidence to prove that the counties and towns on the rivers and the coast lost far less by emigration than the inland country. Taking three inland counties in Connecticut, Litchfield, Windham and Tolland; we find that their total population amounted in 1790 to 80,782. Twenty years later,[1] it was 81,285, an increase of 503 persons or $\frac{6}{10}$ of one per cent. In the same period two coast counties and one river county, Fairfield, New Haven and Hartford, increased from 105,109 to 122,747, or 16.8 per cent.

TABLE III.

Population Growth in Inland and Coast Counties.

	INLAND COUNTIES		
	1790	1800	1810
Litchfield	38,755	41,214	41,375
Windham	28,921	28,222	26,111
Tolland	13,106	14,319	13,799
Total	80,782	83,755	81,285

	COAST AND RIVER COUNTIES		
Fairfield	36,250	38,208	40,950
Hartford	38,029	42,147	44,733
New Haven	30,830	32,162	37,064
Total	105,109	112,517	122,747

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[1] I have limited the inquiry to the two decades because of the influence which the growth of manufactures was already beginning to exert in the decade 1810–1820. In the case of Tolland and Windham counties there were some changes in boundary lines between 1790 and 1810; the figures given are for the areas as of 1790.

Narrowing the scope of our inquiry to the towns, we find the same situation. Wherever there was a chance for some additional employment for the inhabitants besides agriculture, there the loss from emigration was much less than in purely agricultural towns. Contrast, for instance, the towns of Farmington and Danbury in Connecticut. The former, situated in a rich river valley,[1] contained in 1790 2,700 people, who got their living entirely from agriculture. In 1810, twenty years later, the population was 2,750; the increase had been less than 2 per cent. In Danbury there was in 1790 a population of 3,031. In 1810 there were 3,606 persons on the same area. The increase in twenty years was almost 20 per cent. As far as the productivity of the agricultural industry was concerned, both towns were on an equal footing.[2] In area Farmington had clearly the advantage, containing 70 square miles while Danbury had only 58.[3] The reason why a large part of the surplus of population stayed at home in Danbury while almost all the growing generation emigrated from Farmington is to be found in the presence in the former of a manufacturing enterprise, the hatters' shops.[4]

Population Changes in Commercial and Inland Towns.

The same sort of contrast is found between commercial and inland towns. Such towns as New Haven, Providence, Salem and Boston gained rapidly in population and do not seem to have been in any appreciable degree affected by the emigration which was draining the backcountry districts.[5] Here we find the growing prosperity of commerce as a force retaining the natural increase of population. But even the small towns along the coast, where, as we have seen, there was not enough commercial business to employ any considerable proportion of the population, grew steadily during this period. Consider, for example, the contrast between the towns of Lebanon and Greenwich, in Connecticut. Both of these towns included about the same area, 50 square miles. The inhabitants of both were mainly farmers; those in Lebanon entirely so, and in Greenwich with the exception of the owners of twelve or fifteen small sloops trading to New York. In the years 1790–1810 the population of Lebanon decreased from 4,156 to 3,414, a loss of over 20 per cent; in the same years Greenwich had increased from 3,175 to 3,553, a gain of nearly 12 per cent. The decline of the former town cannot be explained on the ground that its soil was less fertile than that of the latter.[6] The explanation of this difference is to be found in the fact that the farmers of

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[1] For a description of Farmington see Pease and Niles, Gazetteer, p. 71.

[2] Pease and Niles, Gazetteer, pp. 176–178.

[3] Op. cit., loc. cit.

[4] See supra pp. 269–270. Another inland town which increased steadily in this period was Berlin, the center of the tinware manufacture. Its population in 1790 was 2,465; in 1810 it was 2,900.

[5] The increase in population of New Haven 1790–1810 amounted to 55 per cent; in Providence the gain was 57 per cent. Boston gained 86 per cent and Salem 59 per cent.

[6] Of agricultural conditions in Lebanon we read: "The soil is generally a rich deep, unctuous mould, nearly of a chocolate colour; it is very fertile and peculiarly adapted to grass." Pease and Niles, art. Lebanon.

Greenwich had a market close at hand in the city of New York,[1] easily accessible by water transportation on the Sound; whereas Lebanon was fifteen or more miles from Norwich, the nearest port.

The Influence of a Market for Foodstuffs.

In Massachusetts a similar contrast may be made between the towns of Brookfield in Worcester County, and Waltham in Middlesex County.[2] In the matter of area and in fertility of soil Brookfield seems to have had the advantage. Neither town had any industrial or manufacturing enterprises, beyond the usual artisans' shops found in every inland town.[3] The population changes in these towns in the years 1790–1810 were, in spite of these similarities, quite different. In Brookfield a population of 3,100 persons increased to 3,170; in Waltham there were at the first date 882 people and at the second 1,014. The gain in one case was between 2 and 3 per cent and in the other almost 15 per cent. The explanation is found again in the presence of a market accessible to the farmers of Waltham. This market they found in Boston, only ten miles distant, whereas their colleagues in Brookfield were fifty-five miles farther away. That this market was in fact influential in increasing the prosperity and the productiveness of the agricultural industry in Waltham is apparent from the description of a contemporary writer. He says: "As most of the inhabitants are farmers, and cultivate their farms with a view to the constant supply of the market of the metropolis, the fruits of their labours are various . . . . The state of agriculture has been improving among our farmers, for several years. The residence of gentleman farmers in this town and vicinity has undoubtedly contributed to this improvement; but the chief causes are the increasing demands of the market and the enhancing price of labour, which have taught the owners of the soil, that it is more profitable to cultivate a few acres highly, than many in the ordinary way."[4]

Summary of Population Changes, 1790–1820.

In summarizing the movement of population in the three southern states of New England in the period 1720–1820 we find: (1) In the forty years, 1720–1760, emigration was confined largely within the borders of the states, resulting merely in a redistribution, a shifting of the surplus from the older towns to new lands in the western counties. (2) After 1760 this process of settling new land within these states continued with great rapidity, but some of the more adventurous colonists were already moving out to found new towns in northern New England and in states to the westward. (3) Where as, up to the Revolution, this emigration to more distant regions had assumed no very great proportions, after peace had been concluded it began with new vigor and from that time until

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[1] Pease and Niles say of the coasting trade of this town: "This trade is a great convenience to the farmers, as it affords them a great facility for conveying their produce to New York. Gazetteer, p. 180.

[2] The facts regarding Waltham are from the description of that town contained in Mass. Hist. Soc. Coll., II. 3: 261–284; for Brookfield from Whitney's History of the County of Worcester, pp. 62–82.

[3] The cotton mills were first established in Waltham in 1812 and 1813. Mass. Hist. Soc. Coll., loc. cit.

[4] Mass. Hist. Soc. Coll., II. 3: 262–263.

1820 continued at such a rate as to leave the population of these states practically stationary. (4) The migratory movement was felt much more strongly in inland counties than on the coast, because of the entire reliance of the former on agriculture. (5) Among the agricultural towns, those which had a market for their products suffered far less severely from emigration than other towns not so favorably situated.

Emigration the Result of a Crippled State of Agriculture.

In this phenomenon of emigration, therefore, we have another feature of the social and economic life of southern New England which was caused directly by the dependence of the entire community on a single industry, agriculture. There was, as we have seen, no division of labor sufficient either to furnish a market for agricultural products within the rural town, or to create a non-agricultural population in industrial towns and cities. There was, indeed, a small market in the commercial towns on the coast and another somewhat larger in the West Indies and the Southern states, but their combined demands were not sufficient to influence to any appreciable degree the life of the farmers in inland towns. The results of this state of affairs upon the agricultural industry are considered in Chapter V. List has called this condition "a crippled state of agriculture," and goes on to show how the inevitable result is emigration. He says: "By a *crippled state of agriculture*[1] we mean that state of things in which, from want of a powerful and steadily developing manufacturing industry, the entire increase of population tends to throw itself on agriculture for employment, consumes all the surplus agricultural production of the country, and as soon as it has considerably increased either has to emigrate or share with the agriculturists already in existence the land immediately at hand, till the landed property of every family has become so small that it produces only the most elementary and necessary portion of that family's requirements of food and raw materials, but no considerable surplus which it might exchange with the manufacturers for the manufactured products which it requires." [2]

That the causes of this great loss of population were essentially economic was realized by contemporary writers. Various travelers had remarked that the southern states in New England were, at the end of the eighteenth century, fully settled. For instance, La Rochefoucauld wrote: "Connecticut, Rhode Island and Massachusetts have at present nearly their due quantum of population."[3] One especially clear-minded writer had, as early as 1789, anticipated the only remedy for the outward movement. He wrote: "Our lands are cleared and settled; our farms in general will not bear a further division; unless there be some new resource, our most active, industrious and enterprising young men . . . . will emigrate to those new parts of the continent where there is more vacant territory."[4]

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[1] Author's italics.

[2] List, Friedrich. The National System of Political Economy. Translated by S. S. Lloyd. London. 1885. pp. 154–155.

[3] Travels, II. 195. See also Carey, American Pocket Atlas, p. 46; Morse, Gazetteer, 1810, art. Connecticut; American Husbandry, I. 47.

[4] Quoted from an anonymous letter dated at Hartford, Connecticut, printed in the American Museum. Vol. VIII., p. 25.

Other Causes of Emigration.

Combined with the economic motive, the demand for new soil, were undoubtedly others more psychological in nature. Some men were unable to fit into the rigid, Puritanical social and ecclesiastical systems. They emigrated in order to breathe the freer, more unconventional atmosphere of the pioneer communities. Others were simply infected by the contagious spirit; their friends had gone or were going; they too wanted to see the new country and to live its new life. Dwight takes account of these and other motives in the following passage from his Travels: "In the formation of colonies, those, who are first inclined to emigrate, are usually such as have met with difficulties at home. These are commonly joined by persons, who, having large families and small farms, are induced, for the sake of settling their children comfortably, to seek for new and cheaper lands. To both are always added the discontented, the enterprising, the ambitious, and the covetous. Many of the first, and some of all these classes, are found in every new American country, within ten years after its settlement has commenced. From this period, kindred, friendship, and former neighbourhood, prompt others to follow them. Others, still, are allured by the prospect of gain, presented in every new country to the sagacious, from the purchase and sale of new lands; while not a small number are influenced by the brilliant stories, which everywhere are told concerning most tracts during the early progress of their settlement."[1]

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[1] Travels, II. 439. In the succeeding pages, 439–443, one may read a description of the successive stages in the settlement of new land, from pioneering to ultimate cultivation in well-settled communities, which has attained the rank of a classic in economic history.

APPENDIX C.

PARTIAL LIST OF WORKS ON AGRICULTURE PUBLISHED IN THE UNITED STATES BEFORE 1815.[1]

A. General Works.

BORDLEY, JOHN BEALE. Essays on Husbandry and Rural Affairs. Philadelphia. 1791. 536 pp. 2 ed. 1801.

BOWLER, METCALF. Treatise on Agriculture and Practical Husbandry. Providence. 1786.

DABNEY, J. Address to Farmers. pp. 64. Salem. 1796.

DEANE, SAMUEL. The New England Farmer; or, Georgical Dictionary: pp. 335. Worcester. 1790. 2 ed. 1797 (3 ed. 1822).

ELIOT, JARED. Essays on Field Husbandry in New England. Boston. 1760. 2 ed. 1761.

ENFIELD, EDWARD. An Inquiry in to the State of Farms: to the Farmers of New Hampshire. Boston. 1812.

EVERETT, DAVID. Common Sense in Dishabille: or, The Farmer's Monitor. Worcester. 1799.

GLEANINGS from the Most Celebrated Book on Husbandry. Philadelphia. 1803.

HIRZEL, HANS KASPAR. The Rural Socrates. Hallowell (Me.). 1800.

HUNTER, A. Georgical Essays. 6 vols. New York. 1803–1804.

MOORE, T. Gross Error of American Agriculture Exposed. Baltimore. 1801.

PARKINSON, RICHARD. The Experienced Farmer. Philadelphia. 1799.

ROBERTS, JOB. The Pennsylvania Farmer. Philadelphia. 1804.

SPURRIERS, —— The Practical Farmer. Worcester. 1792.

TAYLOR, COL. JOHN. Arator. Baltimore. 3 ed. 1817.

(THOMFSON, CHARLES) Notes on Farming, pp. 38. New York. 1787.

WARREN, GENERAL J(ames) Observations on Agriculture. In American Museum. Vol. II. 1788.

B. Special Works.

ABSTRACT of a Late Treatise on Hemp. Boston. 1766.

AFFERT, M. The Art of Preserving Animal and Vegetable Substances. New York. 1812.

ANDERSON, JAMES. Essay on Quick Lime as a Manure. Boston. 1799.

BORDLEY, JOHN BEALE. Comparative View of the Crops of England and Maryland. Philadelphia. 1784.

Sketches of a Rotation of Crops. 1797.

Treatise of Country Habitations. 1798.

Essays and Notes on American Husbandry. 1799.

Treatise on the Culture of Hemp. 1799.

Queries on the Nature and Principles of Vegetation. 1800.

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[1] This list has been taken largely from that given in U. S. Department of Agriculture, Annual Report, 1868, pp. 597–607.

Custis, G. W. P. Importance of Encouraging Agriculture. Alexandria. 1808.

"Farmer of Massachusetts." Complete Guide for the Management of Bees. Worcester. 1792.

Griffen, William. Treatise on the Cultivation of the Pineapple. Newark (N. J.). 1808.

—— —— Hemp. Observations on its Culture. Boston. 1766.

Logan, George. Experiments with the Best Rotation of Crops. Philadelphia. 1807.

Livingston, Robert R. Essay on Sheep. New York. 1809. 2 ed. 1810.

Mann, Thomas. Culture of the Young Thorn. Wilmington (Del.) 1807.

Minor, (Thaddeus). The Experienced Bee Keeper. Litchfield (Conn.) 1804.

Rush, Benjamin. An Account of the Sugar Maple Tree of the United States. Philadelphia. 1792.

—— —— Treatise on Silk Worms. New York. 1793.

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The Political Repository. Brookfield, Mass. 1791–1798.
The Western Star. Stockbridge, Mass. 1789–1803.
The Bee. New London, Conn. 1797–1802.
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Transactions

of the

Connecticut Academy of Arts and Sciences

Volume XXI

New Haven, Connecticut
1916, 1917

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INCORPORATED A. D. 1799

VOLUME 21, PAGES 1-144 DECEMBER, 1916

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THE TUTTLE, MOREHOUSE & TAYLOR COMPANY

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ABBREVIATIONS

The following titles are cited by the name or abbreviation which occurs first in the line:

Azarius. See Petrus Azarius.
Baillie-Grohman (ed.), *The Master of Game.*
Barnes, *History of Edward III.*
Benvenuto (Sangiorgio), *Chronicon* (*M. H. P.*, pp. 1337-1340).
Benvenuto (Sangiorgio), *Historia Montisferrati* (*R. I. S.* 23. 554-560).
Corazzini, *Le Lettere Edite e Inedite di Messer Giovanni Boccaccio.*
Cordey, *Les Contes de Savoie et les Rois de France* (*Bibl. de l'École des Hautes Études,* Vol. 89).
Corio, *L'Historia di Milano,* Padua, 1646, pp. 468-471.
Delachenal, *Histoire de Charles V.*
De Noirmont, *Histoire de la Chasse en France.*
De Sade, *Mémoires pour la Vie de François Pétrarque.*
Florio, *World of Words.*
Fracassetti, *Lettere di Francesco Petrarca.*
Giulini, *Memorie Spettanti alla Storia . . . della Città e Campagna di Milano ne' Secoli Bassi,* Milan, 1856.
Grævius, *Thesaurus Antiquitatum,* Vol. 3, Part 1.
Hutton, *Giovanni Boccaccio.*
Jovius, *Vitæ Duodecim Vicecomitum* (Grævius, *Thes. Antiqq.*, Vol. 3).
Knighton, *Chronicon* (Rolls Series).
Körting, *Petrarca's Leben und Werke.*
Lavisse, *Histoire de France.*
Leighton, *New Book of the Dog.*
Leo, *Geschichte von Italien.*
Le Roulx, *La France en Orient.*
Magenta, *I Visconti e gli Sforza nel Castello di Pavia.*
Mézières, *Pétrarque.*
Michelet, *Histoire de France,* nouvelle édition.
Miller (William), *The Latins in the Levant.*
Muratori, *Annali d'Italia,* Vol. 8, Milan, 1744.
Petrus Azarius, *Chronicon* (*R. I. S.* 16. 297-424).
Rodd, *The Princes of Achaia.*
Rosmini, *Dell' Istoria di Milano.*
Rossetti (Domenico), *Poesie Minori del Petrarca,* Vol. 3.
Rymer, *Fœdera.*
Sandford, *Genealogical History of the Kings of England,* London, 1707.
Sismondi, Eng., *History of the Italian Republics,* English abridgment.
Sismondi, Fr., *Histoire des Républiques Italiennes du Moyen Age,* Paris, 1826.
Venturi, *Storia dell' Arte Italiana,* Vol. 4.

Walsingham, *Historia Anglicana* (Rolls Series).
Wells, *Manual of the Writings in Middle English.*

Alip. = Aliprando, *Cronica della Città di Mantova* (*Antiquitates Italicæ Medii Ævi,* ed. Muratori, 5. 1187-91).
Annal. Med. = *Annales Mediolanenses* (*R. I. S.* 16. 738-740).
Chron. Plac. = *Chronicon Placentinum* (*R. I S.*, Vol. 16).
Cron. Monf. = Galeotto del Carretto, *Cronica di Monferrato* (*M. H. P.* 1212-3, 1225-8).
Cron. Saluz. = Gioffredo della Chiesa, *Cronaca di Saluzzo* (*M. H. P.*, pp. 1013-5, 1025, 1027).
Fam. = Petrarch, *Epistolæ de Rebus Familiaribus.*
Frag. = *Fragmentum Historiæ Mediolanensis* (*R. I. S.* 16. 1051-4).
Hist. Background = Cook, *The Historical Background of Chaucer's Knight* (*Trans. Conn. Acad. of Arts and Sciences* 20. 161-240).
Kervyn = Froissart, *Chroniques,* ed. Kervyn de Lettenhove.
M. H. P. = *Monumenta Historiæ Patriæ* (unless volume and page are specified) Vol. 5 (*Script.* 3).
Morte Darthur, ed. Sommer.
R. I. S. = *Rerum Italicarum Scriptores,* ed. Muratori.
Romans = Paulin Paris, *Les Romans de la Table Ronde.*
Sen. = Petrarch, *Epistolæ Rerum Senilium.*
Var. = Petrarch, *Epistolæ Variæ.*

The numbered column of a double-columned page is here designated as 'page.'

I. INTRODUCTION

In my paper, *The Historical Background of Chaucer's Knight* (*Trans. Conn. Acad. of Arts and Sciences* 20. 161-240), I touched upon Chaucer's relations with Lionel, Duke of Clarence, and incidentally discussed (pp. 182-6) the statement reported by Speght to the effect that Chaucer had been present at the marriage of Lionel and Violante, daughter of Galeazzo II of Milan. It has seemed to me that a more detailed account than has hitherto appeared in print of Lionel's journey to Italy in 1368, of the circumstances attending his marriage, and of his brief life thereafter, might especially help, whatever its value to the biographer of Lionel, or to the student of England's relations with Italy in the 14th century, to determine the probability of Chaucer's visit to Italy on the occasion in question. The men and manners that he would have observed on the journey, even as a humble attendant of Prince Lionel, appeal so powerfully to the imagination, and would have contributed so significantly to his poetic education, that the student of Chaucer's life can hardly remain satisfied until the teasing question has been answered, or the impossibility of answering it has been in a measure demonstrated. It is with primary reference to Chaucer, then, that this study has been undertaken. The poet is never, it is true, in the foreground of the picture. At best he is a somewhat shadowy figure in the background. How far he can be said to emerge, it is left for the reader to determine. Meanwhile, certain other characters—knights, squires, men-at-arms, fair ladies, poets, statesmen, and even kings—will at least troop across the page, to some extent in their habits as they lived.

II. ITALY AND THE VISCONTI

The house of Visconti, Lords of Milan, and constant aggressors on neighboring states, large and small, had attained a degree of opulence and consideration which incited them to aim at alliances with royalty, not merely for their present satisfaction, but also thereby to attain their ulterior ends—the more rapid annexation of other lordships, and perhaps in time the complete subjugation of Italy. In order to understand something of what lay before Lionel when he should have crossed the Alps, it will repay us to glance at the situation of affairs in northern Italy, and at the character of the ambitious family which for more than a century had been rising from comparative obscurity to a certain eminence.

1. ITALY IN THE FOURTEENTH CENTURY

Italy in the 14th century is thus characterized[1] by Sismondi, Fr.:

> Le quatorzième siècle est une époque brillante pour l'Italie: dans aucun temps les lettres n'ont été cultivées avec plus d'ardeur, les savans accueillis, honorés avec plus d'enthousiasme; dans aucun temps de plus grandes lumières n'ont été acquises et généralement répandues parmi les hommes; dans aucun temps de plus nobles monumens du génie créateur, ou du travail opiniâtre de l'homme, n'ont été transmis à la postérité. Le renouvellement des lettres grecques et latines, la création de la langue italienne et de la poésie moderne, l'art d'enseigner la politique dans l'histoire, et de présenter aux hommes, par le récit des événemens, une leçon non moins attrayante qu'instructive, le perfectionnement de la jurisprudence, les progrès rapides de la peinture, de la sculpture, de l'architecture, et de la musique, sont dus plus particulièrement aux hommes du quatorzième siècle. Mais cette période, qui, à tant de titres, mérite une étude particulière, ne fut point heureuse pour l'humanité. Plusieurs des vertus qui relèvent le caractère des hommes, qui, en s'alliant à leurs passions, les ennoblissent, avoient presque absolument disparu: et des vices rebutans, des vices qui dégradent l'histoire que nous écrivons, avoient pris leur place. Dans les cours des princes, la bassesse rampante, la lâche flatterie, l'intrigue et le vice, étoient les moyens les plus assurés de parvenir. Les petits souverains donnoient

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[1] 6. 1-3 (chap. 38).

l'exemple de tous les crimes; une débauche grossière régnoit dans l'intérieur de leurs palais; le poison et l'assassinat étoient employés chaque jour par eux, comme les sauvegardes de leur gouvernement: des troupes d'assassins étoient entretenues à leurs gages; et une protection entière étoit assurée aux brigands, en retour des services qu'ils rendoient. Dans les familles des princes, la passion de régner n'étoit arrêtée par aucun crime; et elle excitoit des révolutions fréquentes, presque toujours préparées par une noire perfidie, et accomplies par des forfaits atroces, ou prévenues par une effrayante cruauté. Dans les tribunaux, un pouvoir arbitraire et souvent injuste faisoit de la punition des crimes un revenu pour le prince: soupçonneux par avarice, il acquéroit des preuves par la torture, et punissoit les coupables par d'horribles supplices. Dans la politique, une ambition qui employoit la trahison plutôt que les armes, comme moyen de vaincre, détruisoit toute confiance dans les traités, toute sûreté dans les alliances, tout lien d'amitié entre les peuples. Dans la guerre, des troupes mercenaires, perfides et cruelles, sacrifioient leur souverain à l'ennemi qui vouloit les acheter, mettoient leur honneur à l'enchère, et, épargnant les armées qu'elles avoient à combattre, ne ruinoient que les campagnes paisibles et les citoyens innocens.

Elsewhere Sismondi, Fr., says[2]:

> Dans le quatorzième siècle, les individus se détachent davantage de la foule; ils attirent sur eux l'attention; ils la commandent par leurs hauts faits, leurs talens ou leurs crimes: mais l'on ne voit point la nation à laquelle ils appartiennent s'avancer dans aucune carrière; et tandis qu'eux-mêmes, comme des lumières errantes, brillent et cheminent en tous sens, les divers peuples qu'ils devroient guider s'égarent dans les sentiers tortueux de la politique; ils avancent et reculent tour à tour: les uns marchent à la liberté, les autres au despotisme; l'immoralité et la religion, la superstition et la philosophie, le courage et la pusillanimité dominent tour à tour, et l'on ne sauroit affirmer, après la révolution de tout le siècle, si aucun progrès a été fait dans aucun sens.

Macaulay says (*Essay on Machiavelli*):

> The Crusades, from which the inhabitants of other countries gained nothing but relics and wounds, brought to the rising commonwealths of the Adriatic and Tyrrhene seas a large increase of wealth, dominion, and knowledge. The moral and the geographical position of those commonwealths enabled them to profit alike by the barbarism of the West and by the civilization of the East. Italian ships covered every sea. Italian factories rose on every shore. The tables of Italian

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[2] 8. 3 (chap. 57).

money-changers were set in every city. Manufactures flourished. Banks were established. The operations of the commercial machine were facilitated by many useful and beautiful inventions. We doubt whether any country of Europe, our own excepted, have at the present time reached so high a point of wealth and civilization as some parts of Italy had attained four hundred years ago [written in 1827]. Historians rarely descend to those details from which alone the real state of a community can be collected. Hence posterity is too often deceived by the vague hyperboles of poets and rhetoricians, who mistake the splendor of a court for the happiness of a people. Fortunately, John Villani has given us an ample and precise account of the state of Florence in the early part of the fourteenth century. The revenue of the Republic amounted to three hundred thousand florins; a sum which, allowing for the depreciation of the precious metals, was at least equivalent to six hundred thousand pounds sterling: a larger sum than England and Ireland, two centuries ago, yielded annually to Elizabeth. The manufacture of wool alone employed two hundred factories and thirty thousand workmen. The cloth annually produced sold, at an average, for twelve hundred thousand florins; a sum fully equal, in exchangeable value, to two millions and a half of our money. Four hundred thousand florins were annually coined. Eighty banks conducted the commercial operations, not of Florence only, but of all Europe. The transactions of these establishments were sometimes of a magnitude which may surprise even the contemporaries of the Barings and the Rothschilds. Two houses advanced to Edward the Third of England upwards of three hundred thousand marks, at a time when the mark contained more silver than fifty shillings of the present day, and when the value of silver was more than quadruple of what it now is. The city and its environs contained a hundred and seventy thousand inhabitants. In the various schools about ten thousand children were taught to read; twelve hundred studied arithmetic; six hundred received a learned education.

2. LOMBARDY AND TUSCANY IN THE FOURTEENTH CENTURY

Sismondi, Eng., thus describes the condition of Lombardy and Tuscany:

Before thus entering within the walls of the principal cities, it is right to give a sketch of the general aspect of the country, particularly as the violent commotions which it experienced might give a false idea of its real state. This aspect was one of a prodigious prosperity, which contrasted so much the more with the rest of Europe that nothing but poverty and barbarism were to be found elsewhere. The open country, designated by the name of *contado*, appertaining to each city, was cultivated by an active and industrious race of peasants, enriched by their labor, and not fearing to display their wealth in their dress, their cattle, and their instruments of husbandry. The proprietors, inhabitants of towns, advanced them capital, shared the harvests, and alone paid the land-tax: they undertook the immense labor which has given so much fertility to the Italian soil—that of making dikes to preserve the plains from the inundation of the rivers, and of deriving from those rivers innumerable canals of irrigation. The Naviglio Grande of Milan, which spreads the clear waters of the Ticino over the finest part of Lombardy, was begun in 1179, resumed in 1257, and terminated a few years afterwards.[3] Men who meditated, and who applied to the arts the fruits of their study, practised already that scientific agriculture of Lombardy and Tuscany which became a model to other nations; and at this day, after five centuries, the districts formerly free, and always cultivated with intelligence, are easily distinguished from those half-wild districts which had remained subject to the feudal lords.

The cities, surrounded with thick walls, terraced, and guarded by towers, were, for the most part, paved with broad flagstones; while the inhabitants of Paris could not stir out of their houses without plunging into the mud. Stone bridges of an elegant and bold architecture were thrown over rivers; aqueducts carried pure water to the fountains. The palace of the podestàs and *signorie* united strength with majesty. The most admirable of those of Florence, the Palazzo Vecchio, was built in 1298. The Loggia in the same city, the church of Santa Croce, that of Santa Maria del Fiore, with its dome, so admired by Michael Angelo, were begun by the architect Arnolfo, scholar of Nicolas di Pisa, between the years 1284 and 1300. The prodigies of this first-born of the fine arts multiplied in Italy: a pure taste, boldness, and grandeur struck the eye in all the public monuments, and finally reached even private dwellings; while the princes of France, England, and Germany, in building their castles, seemed to think only of shelter and defense. Sculpture in marble and bronze soon followed the progress of architecture: in 1300, Andrea di Pisa, son of the architect Nicolas, cast the admirable bronze gates of the Baptistery at Florence; about the same time, Cimabue and Giotto revived the art of painting, Casella music, and Dante gave to Italy his divine poem, unequaled in succeeding generations. History was written honestly, with scrupulous research, and with a graceful simplicity, by Giovanni Villani, and his school; the study of morals and philosophy began; and Italy, ennobled by freedom, enlightened nations till then sunk in darkness.

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[3] But the chronicles of Piacenza and Milan say that the Naviglio, running from Milan to Pavia, was constructed by Galeazzo in April, May, and June, 1365 (*R. I. S.* 16. 508, 735), at a price named. See also Magenta 1. 284.—The notes here, and throughout this section, are mine. A. S. C.

The arts of necessity and of luxury had been cultivated with not less success than the fine arts: in every street, warehouses and shops displayed the wealth that Italy and Flanders only knew how to produce. It excited the astonishment and cupidity of the French or German adventurer, who came to find employment in Italy, and who had no other exchange to make than his blood against the rich stuffs and brilliant arms which he coveted. The Tuscan and Lombard merchants, however, trafficked in the barbarous regions of the west, to carry there the produce of their industry. Attracted by the franchises of the fairs of Champagne and of Lyons, they went thither, as well to barter their goods as to lend their capital at interest to the nobles, habitually loaded with debt; though at the risk of finding themselves suddenly arrested, their wealth confiscated, by order of the king of France, and their lives, too, sometimes endangered by sanctioned robbers, under the pretext of repressing usury. Industry, the employment of a superabundant capital, the application of mechanism and science to the production of wealth, secured the Italians a sort of monopoly through Europe: they alone offered for sale what all the rich desired to buy; and, notwithstanding the various oppressions of the barbarian kings, notwithstanding the losses occasioned by their own often-repeated revolutions, their wealth was rapidly renewed. The wages of workmen, the interest of capital, and the profit of trade, rose simultaneously, while every one gained much and spent little; manners were still simple, luxury was unknown, and the future was not forestalled by accumulated debt.

3. THE COMPANIES OF ADVENTURE

Sismondi, Eng., says:

The most immediate cause of the sufferings of the kingdom of Naples, and of all Italy, was the formation of what was called 'companies of adventure.' Wherever tyrants had succeeded to free governments, their first care had been to disarm the citizens, whose resistance was to be feared; and although a little industry might soon have supplied swords and lances, yet the danger of being denounced for using them soon made the subjects of these princes lose every military habit. Even the citizens of free towns no longer thought of defending themselves: their way of life had weakened their corporeal strength; and they felt an inferiority too discouraging when they had to oppose, without defensive armor, cuirassiers on horseback. The chief strength of armies henceforth was in the heavy-armed cavalry, composed of men who had all their lives followed the trade of war, and who hired themselves for pay. The emperors had successively brought into Italy many of their countrymen, who afterwards passed into the service of the tyrant princes.

The Visconti and Della Scalas had sent for many to Germany, believing that these men—who did not understand the language of the country, who were bound to it by no affection, and who were accessible to no political passion—would be their best defenders. They proved ready to execute the most barbarous orders, and for their recompense demanded only the enjoyments of an intemperate sensuality.

But the Lombard tyrants were deceived in believing the German soldier would never covet power for himself, and would continue to abuse the right of the stronger for the advantage of others only. These adventurers soon discovered that it would be better to make war and pillage the people for their own profit, without dividing the spoil with a master. Some men of high rank, who had served in Italy as *condottieri* (hired captains), proposed to their soldiers to follow them, make war on the whole world, and divide the booty among themselves. The first company, formed by an Italian noble at the moment that the Visconti dismissed their soldiers, having made peace with their adversaries, made an attack suddenly on Milan, in the hope of plundering that great city; but was almost annihilated in a battle, fought at Parabiago, on the 20th of February, 1339. A German duke, known only by his Christian name of Werner, and the inscription he wore on his breast of 'enemy of God, of pity, and of mercy,' formed, in 1343, another association, which maintained itself for a long time, under the name of 'the great company.' It in turns entered the service of princes; and, when they made peace, carried on its ravages and plunderings for its own profit. The duke Werner and his successors—the count Lando, a German; and the friar Moriale, knight of St. John—devastated Italy from Montferrat to the extremity of the kingdom of Naples. They raised contributions by threatening to burn houses and harvests, or by putting the prisoners whom they took to the most horrible tortures. The provinces of Apulia were, above all, abandoned to their devastations; and the king and queen of Naples made not a single effort to protect their people.

There now remained no more than six independent princes in Lombardy. The Visconti, lords of Milan, had usurped all the central part of that province; the western part was held by [the Counts of Savoy and[4]] the Marquis[es] of Montferrat, and the eastern by the Della Scala, lords of Verona, Carrara of Padua, Este of Ferrara, and Gonzaga of Mantua. These weaker princes felt themselves in danger, and made a league against the Visconti, taking into their service the great company; but, deceived and pillaged by it, they suffered greater evils than they inflicted on their enemies.

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[4] So Sismondi, Fr., 8. 27.

4. THE HOUSE OF VISCONTI

The dynasty of the Visconti is thus[5] characterized by Sismondi, Fr.:

> Cette dynastie eut l'avantage presque inouï d'avoir successivement six[6] chefs également distingués. La couronne ne passa point des pères aux enfans, et n'entretint point une mollesse héréditaire; la dissimulation, l'égoïsme et le vice, ne formèrent point l'éducation nécessaire des légitimes successeurs du grand Othon; la même lutte, les mêmes vicissitudes de fortune qui développèrent son énergie, agirent tout aussi puissamment sur son frère et ses neveux: tous les six avoient tour à tour lutté avec la fortune; et l'archevêque Jean Visconti, qui mourut le dernier, en 1354, avoit appris, comme ses devanciers, à connoître les hommes, lorsqu'il étoit persécuté et exilé. Il soumit à son pouvoir Gènes, Bologne, et presque toute la Lombardie; il tenta d'envahir la Toscane et l'état de l'Eglise, et peut-être fut-il plus près qu'aucun autre prince du quatorzième siècle, de s'assurer la souveraineté de toute l'Italie. Cependant il excita la défiance de ses voisins, par sa dissimulation et sa perfidie, plus que par ses conquêtes; et les vices par lesquels il croyoit vaincre, arrêtèrent ses victoires et mirent obstacle à sa grandeur.
>
> L'archevêque Jean Visconti fut le dernier des princes de cette famille qui eut quelque magnanimité dans le caractère: mais la passion des conquêtes, le desir insatiable de dominations nouvelles demeurèrent à ses successeurs, quoiqu'ils n'héritassent point aussi des qualités plus brillantes de ce prince. La maison Visconti, jusqu'à son dernier rejeton, ne renonça point aux projets que ses premiers chefs avoient formés, pour asservir l'Italie; elle employa désormais les arts de la foiblesse au lieu de ceux de la force, la perfidie et l'intrigue de préférence aux armes; mais elle tendit constamment au même but.
>
> Bernabos, Galéaz son frère, et Jean Galéaz, fils du dernier, qui leur succéda, étoient des hommes timides autant qu'ambitieux; leur cruauté, leur avarice et leurs exactions, les rendirent odieux à leurs sujets; ils causèrent la ruine des provinces qui leur étoient soumises, par les guerres continuelles qu'ils entretinrent: le commerce fut détruit, les manufactures furent abandonnées, l'agriculture elle-même fut négligée; et plusieurs de ces fertiles campagnes de la Lombardie, qui promettent au travail de si riches récompenses, demeurèrent désertes. Les dévastations des gens de guerre, et le poids des impositions, étouffèrent toute industrie. Cependant Bernabos et Jean

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[5] 8. 23-26 (chap. 57).

[6] Otto, Matteo I, Galeazzo I, Azzo, Luchino, Giovanni (1349-54). These were followed by Matteo II (1354-5), with Galeazzo II (1354-78), and Bernabò (1354-85); to Galeazzo II succeeded Gian Galeazzo (1378-1402).

Galéaz, si mauvais économes de la fortune de leurs peuples, savoient maintenir l'ordre dans l'administration de leurs propres finances; et ce fut la cause principale de leurs succès. Ils disposèrent en tout temps d'un plus ample revenu qu'aucun de leurs adversaires; et ils l'employèrent, d'une main libérale, à récompenser leurs serviteurs fidèles, à maintenir le dévouement des petits états qui s'étoient attachés à eux, enfin à se procurer des partisans ou des traîtres dans les conseils de leurs voisins ou de leurs ennemis. Tandis qu'ils ne ménageoient point leurs trésors pour atteindre le but de leur politique, ils n'avoient garde de les dissiper par une prodigalité insensée; aussi se trouvoient-ils prêts au combat lorsque leurs adversaires avoient déjà épuisé toutes leurs forces, et se sentoient-ils presque assurés de vaincre toutes les fois qu'ils gagnoient du temps.

Tant que Galéaz avoit vécu, et qu'il avoit partagé avec son frère Bernabos l'administration des affaires, ses vices particuliers avoient mis obstacle au progrès des armes du seigneur de Milan; car il étoit étranger à la sage économie de son frère et de son fils: l'amour de la pompe et d'une grandeur apparente, détruisoit ses forces réelles; il dépensa des sommes prodigieuses pour élever des bâtimens somptueux; il en prodigua de plus grandes encore pour allier sa famille, par d'illustres mariages, aux monarques de l'Europe. Mais lorsque Jean Galéaz, son fils, après avoir réuni ses états à ceux de Bernabos, eut rétabli l'ordre dans les finances, il étendit dans tous les sens les limites de sa domination; et il auroit infailliblement asservi toute l'Italie qui n'avoit plus de force pour lui résister, si une mort inattendue n'avoit tout-à-coup arrêté sa carrière.

Sismondi, Eng., says:

Azzo Visconti, the son of that Galeazzo who had been so treacherously used by Louis of Bavaria, had, in 1328, purchased the city of Milan from that emperor, and soon afterwards found himself master of ten other cities of Lombardy; but he died suddenly, in the height of his prosperity, the 16th of August, 1339. As he left no children, his uncle Luchino succeeded him in the sovereignty. Luchino was false and ferocious, but clever, and possessed in war the hereditary talent of the Visconti. He was called a lover of justice, probably because he punished criminals with an excess of cruelty, and maintained by terror a perfect police in his states. He died, poisoned by his wife, on the 23d of January, 1349. His brother John, Archbishop of Milan, succeeded him in power. The latter found himself master of sixteen of the largest cities in Lombardy; cities which, in the preceding century, had been so many free and flourishing republics. His ambition continually aspired to more extensive conquests; and on the 16th of October, 1350, he engaged the brothers Pepoli to cede to him Bologna. . . .

He [John Visconti] died on the 5th of October, 1354, before he could renew attacks [on Florence]; and his three nephews, the

> sons of his brother Stephen, agreed to succeed him in common. The eldest, who showed less talent for government, and more sensuality and vice, than his brothers, was poisoned by them the year following. The two survivors, Barnabas and Galeazzo, divided Lombardy between them; preserving an equal right on Milan, and in the government. . . .
>
> The two brothers Visconti, masters of Lombardy, had at their disposal immense wealth and numerous armies; and their ambition was insatiable. They were allied by marriage to the two houses of France and England; their intrigues extended throughout Italy, and every tyrant was under their protection. At the same time, their own subjects trembled under frightful cruelties. They[7] shamelessly pub-

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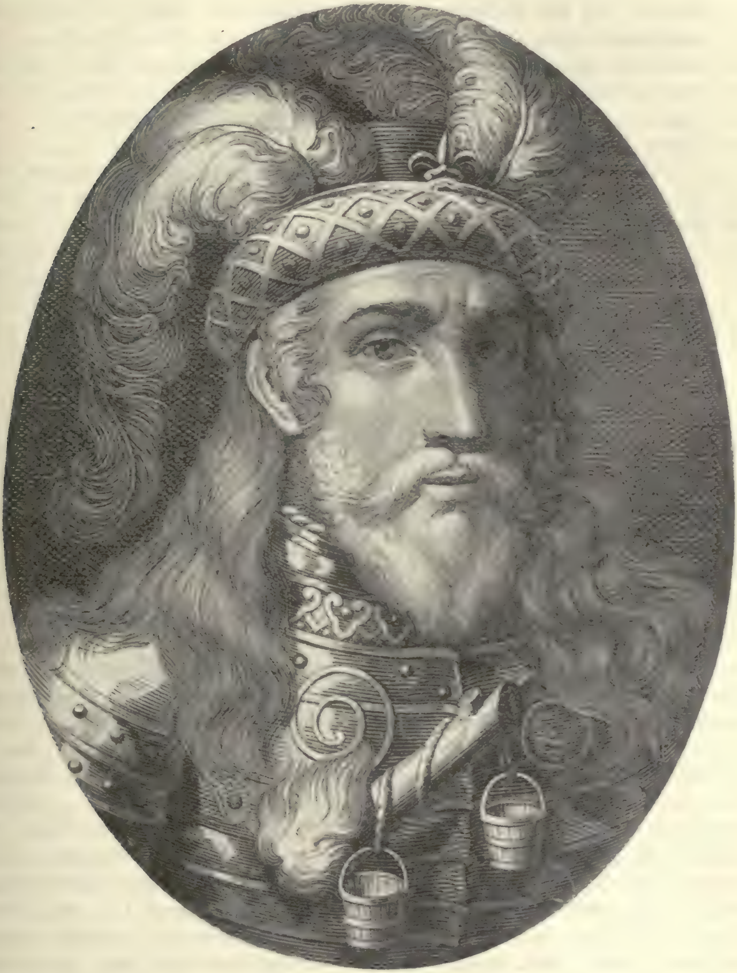
[7] The edict was due to Galeazzo alone, so far as appears (*R. I. S.* 16. 410), and is assigned by Sismondi, Fr., who wrongly attributes it to Bernabò (6. 302-3), to 1359. For an account of these tortures, see Sismondi, Fr., 6. 302-3; Leo 3. 311-2. The following account is directly from the original.

The tortures, which were to be inflicted on traitors and their accomplices, that is, according to Rosmini (2. 113), on all who had opposed him in the recent war, or favored his enemies, were to extend over a period of 41 days, and terminate in death. All the even days of the series were to be spent in recuperating from the agonies inflicted on the odd days, so that there were 21 days of active torment. Only specimens will be here described. They began with the strappado, which consisted of attaching a rope to the condemned, perhaps typically to his hands joined behind his back, and letting him fall, but not to the ground, the length of a rope suspended from a beam. This was done five times a day for days 1, 3, 5, and 7. On days 9 and 11, lime, vinegar, and water were given him to drink. On day 15 the soles of the feet were flayed, and the wretch walked upon peas, the walking to be repeated on day 17. On days 19 and 21, the rack. On day 23, one eye gouged out; 25, the nose cut away; 27, one hand chopped off; 29, the other hand; 31, one foot, etc. On the last day, the sufferer was laid on a cart, and his flesh torn with pincers; following which, he was broken on the wheel ('intenaglietur super plaustro, et postea in rota ponetur'). If we reflect how easily the stigma of treason could be fastened on a person, that there was no appeal from a sentence, that these punishments were actually inflicted on numbers of persons in 1362 and 1363 (*R. I. S.* 16. 411), and that Galeazzo was the less sanguinary of the two brothers, we shall be in a position to estimate one aspect at least of the character of the Visconti.

For Galeazzo's character in general, see *R. I. S.* 16. 402-5; cf. Muratori 8. 382; Rosmini 2. 140-143; Leo 3. 323-4. He has been called the wealthiest and most magnificent Italian of his epoch (*Encyc. Brit.*, 11th ed., 15. 38). For the pious foundations which he established on March 27, 1374, see Giulini 7. 240-243. He died on Aug. 4, 1378, aged 59 years (Corio, p. 495).

lished an edict, by which the execution of state criminals was prolonged to the period of forty days. In it the particular tortures to be inflicted, day by day, were detailed, and the members to be mutilated designated, before death was reached. On the other hand, their finances were in good order; they liberally recompensed their partisans, and won over traitors in every state inimical to them. They pensioned the captain of every company of adventurers, on con-



Galeazzo Visconti.
(From Rosmini 2. 80; cf. Grævius, p. 312.)

dition that he engaged to return to their service whenever called upon. Meanwhile, these captains, with their soldiers, overran, plundered, and exhausted Italy, during the intervals of peace; reducing the country to such a state as to be incapable of resisting any new attack. All the Ghibelines, all the nobles who had preserved their independence in the Apennines, were allied to the Visconti. The march of these usurpers was slow, but it seemed sure. The moment was foreseen to approach when Tuscany would be theirs, as well as Lombardy; particularly as Florence had no aid to expect either from Genoa or Venice. . . .

Urban V, on his arrival in Italy, endeavored also to oppose the usurpations of the Visconti, who had just taken possession of San Miniato, in Tuscany, and who, even in the states of the church, were rendering themselves more powerful than the Pope himself. Of the two brothers, Barnabas Visconti was more troublesome to him by his intrigues. Urban had recourse to a bull of excommunication, and sent two legates to bear it to him; but Barnabas forced these two legates to eat, in his presence, the parchment on which the bull was written, together with the leaden seals and silken strings.[8] . . .

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[8] The story here told (from *R. I. S.* 17. 160, 162) is assigned to a quite different period by *R. I. S.* 16. 800-801, according to which the Pope was Innocent VI, and Urban was one of the two legates; cf. Rosmini 2. 104, note 2; Leo 3. 310. Giulini (5. 465-6) would date the occurrence in 1361. For a story still more scandalous, see *R. I. S.* 15. 911.

The long list of Bernabò's crimes and cruelties may be found in *R. I. S.* 16. 794-801. See also *R. I. S.* 16. 397, 399-400, 735-6, 742-3; Corio, pp. 486-7; Matteo Villani (in *R. I. S.*, Vol. 14) 6. 28; 7. 48; 9. 50; cf. Muratori 8. 413; Giulini 5. 550, 559, 653; Rosmini 2. 115, 153-4. A few particulars may be mentioned: his notorious edict concerning the maintenance of his 5,000 hunting dogs (*R. I. S.* 16. 794; Rosmini 2. 115; Leo 3. 312); he hanged those who caught partridges (*R. I. S.* 16. 794, 795); burned to death four nuns (*ib.*, p. 795); had his jugglers or buffoons burn to death in an iron cage an Augustinian monk (p. 795); would frequently ask those about him, 'Do you not know that I am God on earth?' (p. 795); ordered that no official should receive his salary till he had caused one or more poachers of partridges to be beheaded (p. 796); had a wife burned to death by her own husband (p. 796); had a man's eyes put out, because he was found on Bernabò's private street (p. 796); had a man hanged because he had not fully paid a woman for two capons (p. 796); had two of his chancellors shut up in an iron cage with a wild boar till they died (p. 796); had a country fellow killed because he crossed a street with a dog (p. 796); in December, 1384, had a boy's eye put out, and his hand cut off, because he had dreamed that he had taken and burned a wild boar belonging to Bernabò (p. 797); caused a Doctor of Laws, an excellent man, who had declined to obey an unjust order of his, to be beaten severely with rods, then

Barnabas, grown old, had divided the cities of his dominions amongst his numerous children.[9] His brother, Galeazzo, had died on the 4th of August, 1378, and been replaced by his son, Gian Galeazzo, called Count de Virtus, from a county in Champagne, given him by Charles V, whose sister he had married. Barnabas would willingly have deprived his nephew of his paternal inheritance, to divide it among his children. Gian Galeazzo, who had already discovered several plots directed against him, uttered no complaint, but shut himself up in his castle of Pavia, where he had fixed his residence. He doubled his guard, and took pains to display his belief that he was surrounded by assassins. He affected, at the same time, the highest devotion: he was always at prayers, a rosary in his hand, and surrounded with monks; he talked only of pilgrimages and expiatory ceremonies. His uncle regarded him as pusillanimous, and unworthy of reigning. In the beginning of May, 1385, Gian Galeazzo sent to Barnabas to say that he had made a vow of pilgrimage to our Lady of Varese, near the Lago Maggiore, and that he should be glad to see him on his passage. Barnabas agreed to meet him at a short distance from Milan, accompanied by his two sons. Gian Galeazzo arrived, surrounded, as was his custom, by a numerous guard. He affected to be alarmed at every sudden motion made near him. On meeting his uncle, however, on the 6th of May, he hastily dismounted, and respectfully embraced him; but, while he held him in his arms, he said, in German, to his guards, 'Strike!' The Germans, seizing Barnabas, disarmed and dragged him, with his two sons, to some distance from his nephew.[10] Gian Galeazzo made several vain attempts to poison his uncle in the prison into which he

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forced to cut out another man's tongue, and finally to drink a cup of poison (p. 797); and tried to have Gian Galeazzo poisoned (p. 798). See also pp. 48-9. In the very year of Lionel's marriage, Bernabò issued a mandate that when he rode through the streets of Parma, every one should bow the knee, and do him reverence (*R. I. S.* 16. 740-741).

For an amusing story of Bernabò's encounter with a rustic, see *R. I. S.* 16. 393-6, cf. 743.

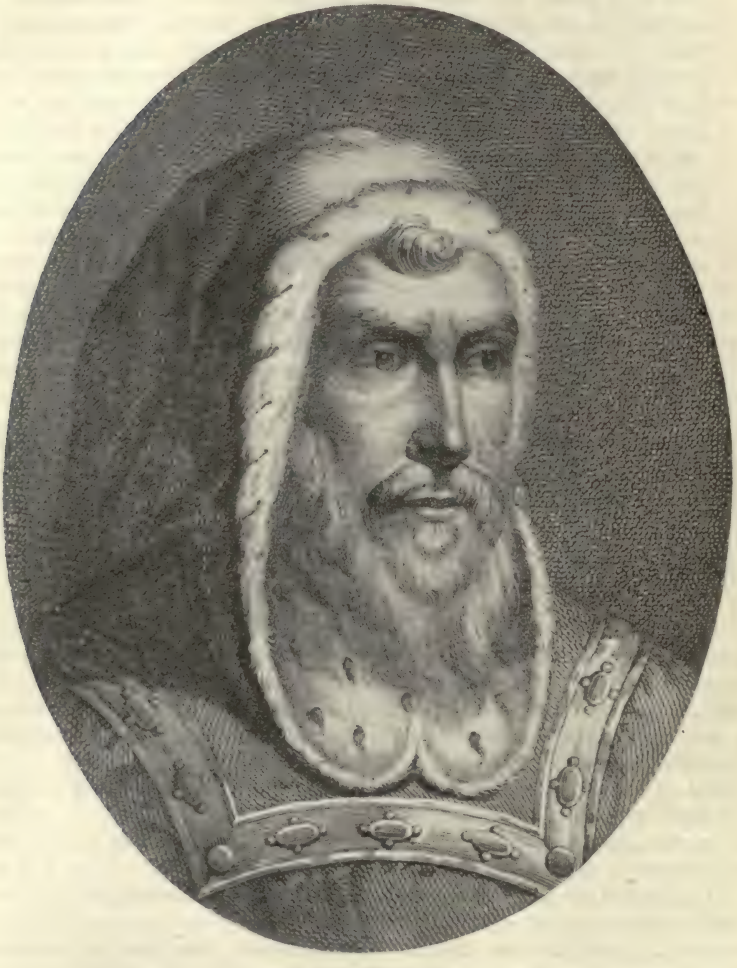
The little good that could be said of him will be found in *R. I. S.* 16. 801; Corio, p. 509.

[9] Lodovico (see pp. 109-110) received Lodi and Cremona (*R. I. S.* 16. 800; Corio, p. 498, cf. 507).

At one particular time Bernabò is reported to have had 36 children, and 18 women to have been with child by him (*R. I. S.* 16. 800). He is accused, when already advanced in years, of keeping a regular harem (16. 799).

[10] *R. I. S.* 15. 510, 1082; 16. 543, 784-5, 853; 17. 497-9, 1126-7; 18. 92-3, 195-6, 525-6; 19. 785-6; Corio, p. 506; cf. Muratori 8. 412-4; Giulini 5. 653-5; Rosmini 2. 153-5; Leo 3. 327-8; Symonds, *Age of the Despots*, chap. 2.

had thrown him; but Barnabas, suspicious of all the nourishment offered him, was on his guard, and did not sink under these repeated efforts till the 18th of December of the same year.[11]



Bernabò Visconti.
(From Rosmini 2. 144; cf. Grævius, p. 316.)

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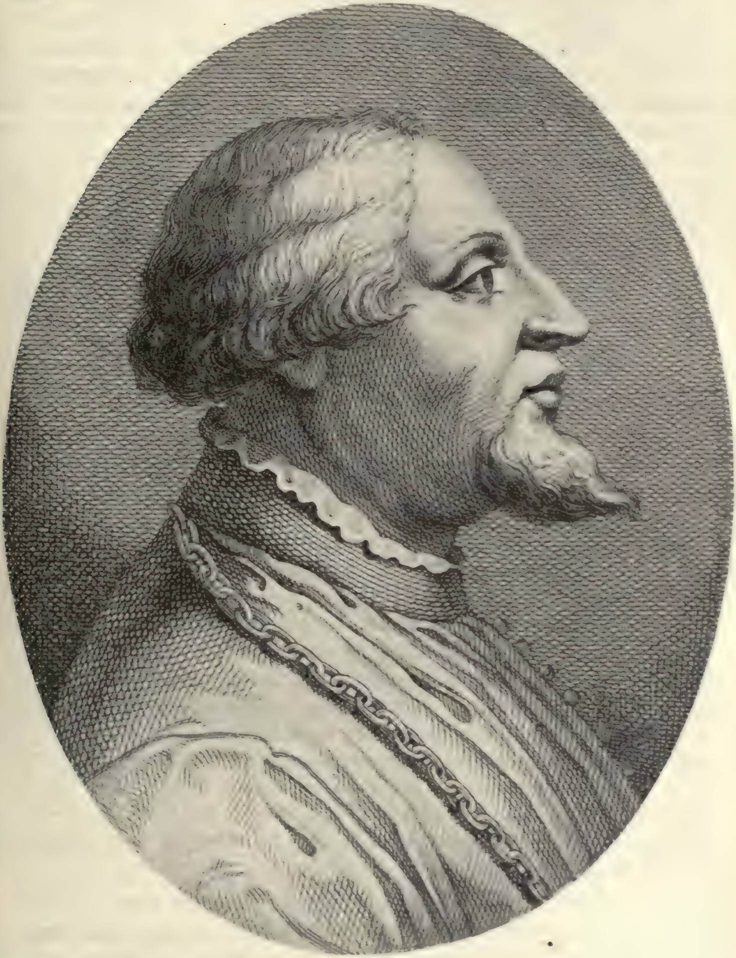
[11] *R. I. S.* 15. 512; 16. 544, 800, 854; 17. 499; Corio, p. 509; Muratori 8. 416; Giulini 5. 659; Rosmini 2. 157; Leo 3. 329. Bernabò died, at the age of 66, in the castle of Trezzo, a little more than half way (12

All Lombardy submitted, without difficulty, to Gian Galeazzo. His uncle had never inspired one human being with either esteem or affection. The nephew had no better title to these sentiments. False



Gian Galeazzo.
(From Rosmini 2. 156; cf. Grævius, p. 320.)

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miles) from Monza to Bergamo. The ruined castle is still standing (Bædeker, *Oberitalien,* 18th ed., p. 24). After his death, Lodovico and Rodolfo, his two sons, who had been imprisoned in S. Columbano, near

> and pitiless, he joined to immeasurable ambition a genius for enterprise, and to immovable constancy a personal timidity which he did not endeavor to conceal. The least unexpected motion near him threw him into a paroxysm of nervous terror. No prince employed so many soldiers to guard his palace, or took such multiplied precautions of distrust. He seemed to acknowledge himself the enemy of the whole world. But the vices of tyranny had not weakened his ability. He employed his immense wealth without prodigality; his finances were always flourishing; his cities well garrisoned and victualed; his army well paid; all the captains of adventure scattered throughout Italy received pensions from him, and were ready to return to his service whenever called upon. He encouraged the warriors of the new Italian school: he well knew how to distinguish, reward, and win their attachment. Many young Italians, in order to train themselves to arms, had, from about the middle of this century, engaged in the German, English, and French troops, which inundated Italy; and they soon proved that Italian valor, directed by the reflection and intelligence of a highly civilized nation, who carried their arms as well as tactics to perfection, had greatly the advantage over the brute courage of barbarians.[12]

The influence of Gian Galeazzo in overthrowing the last remains of liberty in Italy has been thus described[13]:

> L'esprit de liberté sembloit s'éteindre dans toute l'Italie. . . . Cette terre, autrefois si fertile en citoyens et en héros, sembloit désertée par toutes les vertus et tous les sentimens élevés. Un tyran lâche et perfide prenoit à tâche de détruire chez les Italiens tout ce qui portoit encore l'image de la loyauté et de l'honneur: il n'attendoit des succès qu'en proportion des vices des peuples; et il se réjouissoit de voir un gouvernement adopter sa politique frauduleuse, assuré dès-lors qu'il parviendroit bientôt à le dominer. Tels étoient les funestes présages qui accompagnoient la fin du quatorzième siècle. La peste enfin se déclaroit en même temps dans plusieurs parties de l'Italie; et les peuples, effrayés de tant de fléaux, y reconnoissoient les châtimens qu'ils avoient mérités, et se courboient devant la majesté divine, pour implorer sa miséricorde.

Lodi (*R. I. S.* 16. 786; Giulini 5. 659; Rosmini 2. 157), were kept at Trezzo, where they were well treated, but closely guarded (*R. I. S.* 16. 545, 800, 855; Giulini 5. 662; Rosmini 2. 157; Leo 3. 329).

[12] Cf. Corio, p. 562; Rosmini 2. 207-212; Symonds, *Age of the Despots*, chap. 2. He was rather less than 51 years old when he died (Oct. 15, 1351–Sept. 3, 1402).

[13] Sismondi, Fr., 7. 394-5 (chap. 55).

III. THE CONSIDERATIONS WHICH DETERMINED THE ALLIANCE

The negotiations for the marriage of Lionel with Violante were perhaps begun by Amedeo, Count of Savoy.[1] Cordey, referring to the cession of three towns to Amedeo by Galeazzo on Nov. 22, 1366, adds: 'C'était peut-être un encouragement,

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[1] See p. 34. De Sade says (p. 720) that the English in Galeazzo's pay suggested the idea of the alliance, and helped him to secure it, and Rosmini (*Dell' Istoria di Milano* 2. 119-120) speaks of 'quest' alleanza segnatamente da Galeazzo contratta per conciliarsi l'affetto, e valersi dell' opera della famosa compagnia degl' Inglesi condotta da Giovanni Aucud'; to a similar effect Sismondi, Fr., 7. 21-2; Leo 3. 318. It is no doubt true that the relations of Hawkwood and Bernabò began as early as the summer of 1365 (Temple-Leader and Marcotti, *Sir John Hawkwood,* p. 47), and very likely the success of the English in their recent wars may have inspired a wholesome respect in the breasts of the Visconti. We have only to think of Poitiers (1356) and the Peace of Bretigny (1360), for instance. The ransom required for the release of King John has the credit of having brought to pass the marriage of Gian Galeazzo to Isabella of France (cf. below, pp. 36, 49), which cost Galeazzo 600,000 florins (Körting, p. 349; Lavisse $4.^1$ 159-160; Delachenal 2. 231-7), Piacenza alone paying 25,000 of this amount (*R. I. S.* 16. 512).

In 1361 Petrarch was sent to Paris to condole with King John on his misfortunes and to return a ring which he had lost at the battle of Poitiers, and which had been redeemed by the Visconti (Mézières, *Pétrarque,* p. 322). This mission caused him to realize the power of the English, as is apparent from a letter written not long afterwards (*Fam.* 22. 14):

> 'When I was in my teens the English were considered the least courageous of all the barbarians [Corio, p. 462, calls the English 'questi Barbari'], but now this most warlike people have so frequently and unexpectedly defeated the French, long famous for military exploits though they had been, that they who had shown themselves no match for even the contemptible Scots [Bannockburn, 1314; Berwick, 1318] have so wasted the whole realm with fire and sword—not to speak of the ill-fortune of the French king [John], which I can not call to mind without a sigh—that, when I lately made a journey thither on public business, I could hardly persuade myself that I was looking at the same kingdom. Everywhere was solitude, devastation, and sadness; everywhere fields untilled and neglected; everywhere houses in ruins and abandoned, save as they

ou une récompense anticipée.' I should be more inclined to suppose that it was what lawyers call a refresher, rather than a retainer, seeing that already on July 30 of that year a formal

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> were protected by the walls of cities or castles; everywhere the melancholy traces of the English, and the fresh and horrible scars left by their swords' ('Adolescentulo me, Britanni, quos Anglos sive Anglicos vocant, omnium barbarorum timidissimi habebantur; nunc bellicosissima gens Gallos diu bellica gloria florentes stravit tam crebris insperatisque successibus, ut qui modo vilibus Scotis impares fuerant, præter miserabilem et indignum summi regis casum, quem sine suspirio meminisse non possum, sic regnum omne igne ferroque contriverint, ut mihi nuper illuc iter ex negotio agenti vix persuaderi posset regnum illud esse quod videram. Sic ubique solitudo infelix et mœror et vastitas; sic ubique horrida et inculta arva, sic dirutæ desertæque domus, nisi quæ cinctæ arcium mœnibus aut urbium evasissent, sic demum omnibus locis Anglorum mœsta vestigia et recentes fœdæque cicatrices gladiorum extabant').

For the customs and modes of war practised by the English in Italy, see Temple-Leader and Marcotti, *Sir John Hawkwood,* pp. 20, 21, 39-42. The following account is translated from Filippo Villani, chap. 81 (*R. I. S.* 14. 746), and was published in the *Bibl. Topograph. Brit.* 6 (1790). 43-44:

> 'These English were all lusty young men, most of them born and brought up in the long wars between the French and English; warm, eager, and practised in slaughter and rapine, for which they were always ready to draw their swords, with very little care for their personal safety, but in matters of discipline very obedient to their commanders. However, in their camps or cantonments, through a disorderly and over-daring boldness, they lay scattered about in great irregularity, and with so little caution that a bold, resolute body of men might in that state easily give them a shameful defeat. The armor of almost all were cuirasses, their breasts covered with a steel coat of mail, gauntlets, and armor for the thighs and legs, daggers, and broad swords; all of them had long tilting-lances, which, after dismounting from their horses, they were very dextrous in handling. Every man had one or two pages, and some of them more, according to their ability to maintain them. On taking off their armor, it was the business of their pages to keep them clean and bright, so that when they came to action their arms shone like looking-glass, and thus gave them a more terrifying appearance. Others among them were archers, their bows long, and made of yew. They were very expert and dextrous in using them, and did great service in action. Their manner of fighting in the field was almost always on foot. The horses were given in charge to the pages. The body they formed was very compact, and almost round; each lance was held

commission had been issued by Edward III to Humphrey de Bohun, Earl of Hereford, and Sir Nicholas Tamworth, to treat with Galeazzo concerning a marriage between Lionel[2] and Violante.[3] According to a parallel commission, Edmund, Earl of Cambridge, Edward's fifth son, might be substituted for Lionel. Lionel and Edmund, as younger sons, had to be provided for, the Black Prince, the heir to the throne, having already a realm of his own in Aquitaine. Ireland was not a realm to content Lionel, so he was seeking a more desirable province abroad, as John of Gaunt did in Spain.[4]

If the Green Count was instrumental in the earliest stage of the negotiation, then it must have been before July, 1366. That the advances were made from the Italian side is definitely stated

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> by two men in the same manner as the spear is handled in hunting the wild boar; and thus close embodied, with their lances pointed low, and with slow steps, they marched up to the enemy with terrible outcry, and very difficult was it to break or disunite them. But after all, experience has shown they were more fit for night-expeditions and plundering villages than for keeping the field; and their success was more owing to the cowardice of our own men than their valor and military virtue. They had very curious ladders in pieces, the biggest of which was of three steps, and one piece socketed into the other like so many trumpets, and with these they were able to mount the top of the highest towers.'

Muratori (8. 343) says that, in the death of Lionel, Galeazzo lost the hope of assistance from the King of England, and Sismondi (*op. cit.* 7. 22) that it severed his alliance with the companies of adventurers.

[2] Rymer.

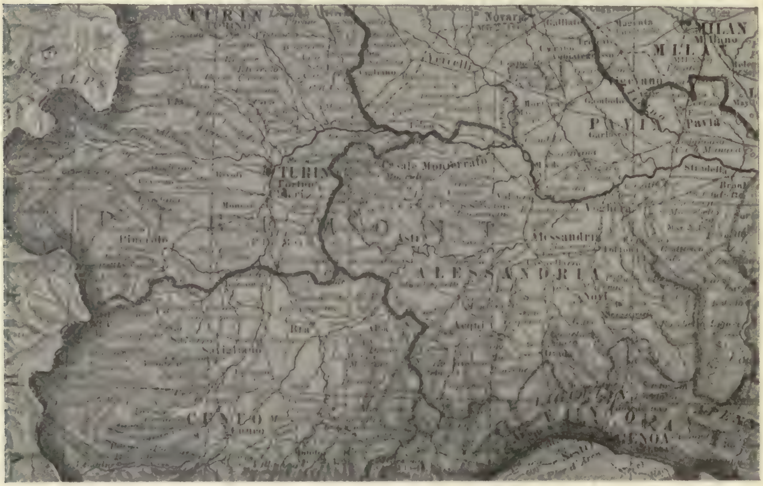
[3] Cf. *Hist. Background*, pp. 182-3. On July 18 Hereford (1341-1373) had appointed an attorney, in view of his approaching trip abroad; and he was still absent from England on Nov. 28 (*Cal. Pat. Rolls*). Of him Froissart wrote (*Buisson de Jonece* 263-4):

Aussi dou conte de Herfort
Pris une fois grant reconfort.

He was the father-in-law of Henry, Earl of Derby, had headed the escort of Pierre I, King of Cyprus, from Dover to London, early in November, 1362 (Jorga, *Philippe de Mézières*, p. 179), and had been with Pierre at Satalia and Ayas (Chaucer's 'Lyeys') in 1367 (*Hist. Background*, pp. 182, 232-3).

[4] Cf. Michelet 6. 4.

by the *Chronicle of Montferrat,*[5] and is no less clear in the light of an offer drawn up by Galeazzo at Pavia on Jan. 19, 1367 (Rymer). In this offer, made as a basis for a marriage-contract,



Piedmont and the Adjacent Regions.

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[5] 'Cercò anchora questo signor Galeatio Visconte de dar in matrimonio Violante . . . al signor Leonetto,' etc. Cf. Corio: 'Galeazzo fece amicitia col Re d'Inghilterra.' It is interesting that the Visconti, as Counts of Angiara, 'did not blush to be called English (*Angli*), as descended from Anglo, reputed to be the son or grandson of Æneas' (Carlo Muletti, p. 15 of Preface to Gioffredo della Chiesa; Corio, p. 9). Gian Galeazzo's three sons were Gian Maria Inglese, Filippo Maria Anglo (both afterwards Dukes of Milan), and Gabriele Anglo (Corio, p. 561, cf. 543, 568), while a daughter of Bernabò was named Inglese (*R. I. S.* 17. 499), or Anglesia (Corio, p. 509). An odd theory to account for these names is that of Rawdon L. Brown (*Cal. of State Papers and Manuscripts . . . in the Archives and Collections of Venice* 1. 252, note): 'It seems probable that the Visconti family had been naturalized by Edward III in 1365 [*sic*], when Lionel, Duke of Clarence, married Violante Visconti.' Muletti refers to the apocryphal genealogy given in *M. H. P.*, pp. 869-870; cf. his Preface, as above, and p. 871, note.

Galeazzo refers to earlier negotiations.[6] The terms offered in the draft are briefly these:

(1) The gift as dowry of Galeazzo's Piedmontese territories—(*a*) the city of Alba, and the towns of Cherasco, Mondovì, and Cuneo, without qualification; (*b*) the overlordship of Centallo and Carru,[7] which had already been granted as a fief by Galeazzo to Pandolfo Malatesta, some time his captain-general.[8] These towns are guaranteed to produce a yearly net income of 24,000 florins of Florence.

(2) The dowry is also to include an annual income in cash of 50,000 florins, payable in Milan, Calais, or London. If this sum seems insufficient, the amount may be determined by the Earl of Hereford[9] and Giovanni de' Pepoli, or their substitutes.

(3) If Edward and Lionel do not care for the towns, but prefer a lump sum, Galeazzo offers 250,000 florins, payable as above.

(4) Violante is to be sent at Galeazzo's expense, with a splendid outfit, from Milan or Pavia to Calais.

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[6] 'Cum . . . aliqua verba et tractatus sint mota et incepta de contrahendo parentellam et matrimonium, videlicet de copulando, legitimo matrimonio, præfato domino Leonelo illustrem Violantem,' etc. (Rymer). By this time, then, the choice had fallen upon Lionel. Perhaps the latter's return from Ireland in November, 1366 (*Hist. Background*, p. 180) points to the same conclusion.

[7] According to the Italian chroniclers, the towns were Alba, Mondovì, Cherasco, Cuneo, Demonte, Centallo, Cavurro (Cavour), Roccasparviera, and Brà, besides others not named. The first three named above are mentioned by all the original authorities; Cuneo is omitted only by Benvenuto; Demonte is mentioned by *Annal. Med.*, *Cron. Monf.*, and *Chron. Plac.;* Brà (Braida) only by Corio, and Centallo and Cavurro only by *Cron. Monf.* Petrus Azarius (quoted by Benvenuto), *Cron. Monf.*, and *Cron. Saluz.* specify that the territories ceded include all those possessed by Galeazzo in Piedmont, *Cron. Saluz.* subjoining: 'et altre ancora.' Benvenuto adds to his list: 'et reliqua oppida'; *Annal. Med.:* 'plura alia loca'; *Chron. Plac.:* 'et plura alia.' Cf. Gabotto, in *Misc. di Stor. Ital.* 33. 168; Corio, p. 448; Sismondi, Fr., 7. 21.

According to *Cron. Monf.*, Alba was rated at 549 gold florins; Cherasco at 429; Cuneo and Demonte together at 419; Centallo at 25; Cavurro at 30; while Roccasparviera is not rated.

Carru is mentioned by *Cron. Saluz.* (*M. H. P.*, p. 1018, cf. p. 996) as belonging to Galeazzo in December, 1369.

[8] See *R. I. S.* 16. 404.

[9] See *Hist. Background*, pp. 182, 230, 232-3.

The definitive marriage-treaty was made at Westminster on May 15, 1367,[10] the terms being much the same as in the draft (Rymer). For example, (1) is the same,[11] except that Galeazzo retains the overlordship of Piedmont, so that Lionel and Violante, and their heirs, owe him fealty and homage; for (2) is substituted the transfer of a lump sum of 100,000 florins,[12] payable

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[10] Barnes, Sandford, and the *Dict. Nat. Biog.* say that on April 25, 1368, the marriage-treaty was signed at Windsor, and the 100,000 (Barnes, 10,000) florins paid; but by this time Lionel was well on his way to Italy.

[11] Walsingham (1. 306; so *Chron. Angl.*, p. 62) says that Lionel was to obtain half of Galeazzo's dominions. Hardyng is more extravagant (pp. 332-3):

> The duke of Milayn, hight sir Bernabo,
> The lord Mantowe & the marques Ferrar,
> The lord of Mountpollestrme then also,
> The lordes of Jene, of Pyse that then were,
> The lordes of Venis and Florence there,
> To kyng Edward sent ambassiate,
> By commen assent of papall senate,
>
> For Lionell his soonne with theim to send
> The duke his doughter of Melayn for to wed,
> Promisyng then hym so to recommend
> That of Itale the rule sholde all be led
> By hym and his frendes of Italye bred,
> And in short tyme to joye and bere the croune
> Of all Italye the royal region.

This is bombastically paraphrased and amplified by Barnes, p. 718.

[12] This is confirmed by Petrus Azarius and *Cron. Saluz.* Corio (p. 468) and Jovius say 200,000 (and Barnes 2,000,000!). Corio comments that such a dowry was, so to speak, the final ruin of Galeazzo's state, and Petrus Azarius has the phrase, 'cum infinito dispendio.' Jovius (*op. cit.* 3. 313), in deploring Galeazzo's fatal extravagance, associates the marriage of Violante with that of Gian Galeazzo to Isabella of France (see below, p. 49):

> 'Eo modo pace parta, et Barnaba nihilo secius pertinaci studio Bononiæ principatum, tanquam sibi fraude ereptum, validis armis repetente, Galeacius externas affinitates, decoras quidem regio fastu, sed sibi et posteris damnosas et fere exitiales quæsivit, Isabella scilicet, Caroli Galliæ Regis sorore, Joanni Galeacio filio expetita, Leonatoque Clarentio, Britanniæ Regis filio, in generum adscito: huic enim ex nuptiis Violantis, quum ducenta millia aureorum nummum dotis nomine recepisset, Mons etiam Regalis atque Alba Pompeia urbes cesserunt. Isabella autem, quæ Mediolanum venerat, usque adeo socero gravis fuit, ut ducentis millibus aureorum constiterit; quan-

to Edward III at London or Calais, of which 50,000 may be paid down at once. Minor details are subjoined. The first of these resembles (4): Violante is to be amply provided with clothes and furniture, and to be sent in honorable state to Calais within six years, if the king so wishes. Further, if Violante should die without an heir, neither the king nor Lionel is to be held to restoration of the money, or of Violante's personal belongings. Should Lionel die, Violante shall keep her jewels, and inherit one-third of the real property of which he shall die seized. Should Lionel die without leaving a child by Violante, the lands assigned as dowry shall revert to Galeazzo or his heirs. If the king needs Lionel, he is to be free at any time to return from Lombardy. If Lionel is made prisoner, while serving with Galeazzo against the latter's enemies, Galeazzo is to provide his ransom. The Black Prince is to be consulted regarding this treaty; if he has no objection, it is to be considered as binding. Galeazzo is to be adjured to add to the territories promised. His ambassadors disclaim any power to bind Galeazzo as respects the treaty, which, in all its articles, is to be referred to him for his final approval and consent.

What was promised by treaty was not, in fact, all that the wedded pair received. The *Chronicle of Montferrat* specifies the following gifts made to them on the day of their marriage:

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quam Virtutis oppidi ditio, honestissimæque appellationis titulus, novo sponso nomine dotis accessisset.'

The collection of the 100,000 florins was entrusted on March 1, 1368, to Sir Thomas Dale and Walter de Barde(s)—one of the Bardi, bankers of Florence (Rymer, March 11, 1363)—master of the mint at Calais and the Tower of London. Kervyn (1. 161) says that Dale received the money between February (March?) and April, at Bruges, but gives no authority.

If a florin of Florence equaled three shillings English, 100,000 florins = £15,000 = approximately $1,125,000 (at the arbitrary rate of £1 = $75; cf. *Hist. Background,* p. 165). Of this sum nearly four-ninths (exactly nineteen-forty-fifths) seems to have been expended for Lionel's journey to Italy (Devon, *Issues of the Exchequer,* March 5, 1369). Probably the journey cost much more, for we know of a single separate item of £178 13 4 = $13,400, merely for transporting Lionel's 457 men and 1280 horses from Dover to Calais (Rymer, May 10, 1368). This sum is made up of £173 6 8 for 39 ships and 13 boats, besides £5 6 8 for the 'pontage' of the horses. The hire of the ships was at the rate of £3 13 4 each, and that of the boats £2 6 8 each.

(1) To Violante, 100,000 gold florins[13] [in addition to the dowry already paid].

(2) To her chamberlain, 1282 florins, for the furnishing of her house.

(3) To Lionel, 10,000 florins.

(4) To Lionel, as provision for himself and his company, 10,000 gold florins a month for June, July, August, [September],[14] October, and half of November—(say) 55,000 florins.[15]

(5) To Lionel, six pieces of cloth of gold made up into various garments—mantles, doublets, *turche,* and hoods—all thickly set with pearls; every one of these being carried away to England.

(6) For other expenses of Lionel and his company, 20,000 gold florins.

Here, then, we have a total of 186,252 florins (not to speak of the cloth of gold), or, let us say, $2,095,335, to add to the $1,125,000 mentioned above.

The ornaments provided for Violante were two crowns of gold, set with numerous sapphires, emeralds, balas rubies, and large pearls; eleven jewels, with pearls and other gems; thirty-five garments of various fashions, made of silk and gold, and embroidered with pearls and precious stones; a large number of collars and necklaces; innumerable ornaments for fastening the hair; together with 294 vessels of silver and gold of various shapes.

IV. LIONEL'S JOURNEY TO ITALY

1. DOVER TO PARIS

Lionel left England early in April,[1] but we can not be sure of the exact day. Froissart[2] informs us that Lionel spent Easter,

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[13] Perhaps Corio and Jovius include this in their 200,000.

[14] Omitted, but almost certainly through inadvertence.

[15] The chronicler complains that, since Lionel died on Oct. 15 (wrong for 17), he had been overpaid by 10,000 florins.

[1] Walsingham (1. 306) merely says 'mense Aprilis.'

[2] Froissart's account of the whole journey is subjoined (from Kervyn 7. 246-7), with interpolations of the chief variants from his second redaction:

> 'En ce temps fu tretiés li mariaiges entre monseigneur Lion, duc de Clarense, fil au roy Édouwart d'Engleterre et à le royne, et la

April 9, at Abbeville.[3] As Abbeville is about 60 miles in a straight line from Calais, where the expedition landed, and as 457 men[4] and 1280 horses[5] would have proceeded rather slowly, four days—April 5, 6, 7, and 8—are none too many to allow for this part of the journey,[6] especially since the cavalcade only reached Paris, 87 miles in a direct line from Abbeville, in time for the next Sunday, April 16.[7] If we assume that they covered

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fille monseigneur Galéas, seigneur de Melans, qu'il avoit de madame Blanche, serour au conte Amé de Savoie, liquels mariaiges se parfist et conferma, et se parti messires Lions, dus de Clarense, d'Engleterre moult estofféement et en grant arroy [accompagniés grandement de chevaliers et d'escuiers d'Engleterre], à bien II^{m} chevaux. Si estoit ses compains en ce voiaige ungs grans bannerès d'Engleterre et riches homs durement, que on nommoit messire Édouwart le Despenssier. Si tint li dessus dis dus ses Pasques en le bonne ville d'Abbeville, qui estoit au roy son père, et puis s'en parti et chevaucha tant par ses journées qu'il vint à Paris, où li roys Charles de Franche estoit, et li dus de Berri, li dus de Bourgoingne, si frère, li dus Loeis de Bourbon [et li sires de Couci] et li contes de Savoie ossi, et rechurent le dit monseigneur Lion et festyèrent grandement, et li donna li roys Carles de Franche grans dons et biaux jeuiaux et à tous ses chevaliers ossi. Puis s'en partirent et chevauchièrent parmy Bourgoingne, et puis entrèrent en le conté de Savoie. Si rechupt li dis contes à Chambéry monseigneur Lion d'Engleterre et ses gens moult grandement, et les festia et honnoura durement, enssi que bien le savoit faire, puis s'en partirent [et passa li dessus dis dus parmi le royaume de France et vint en Savoie, où li gentils contes de Savoie le rechut très-honnerablement en Chambéri, et fu là II jours en très-grans reviaus de danses, de caroles et de tous esbatemens. Au tierc jour, il parti] et passèrent oultre en Lombardie, et estoient de bonne ville en bonne ville trop grandement festyet et honnouret. Si acompaignoit le dit monseigneur Lion li gentils contes de Savoie, et l'amena à Melans. Là fu-il grandement festyés de monseigneur Galéas et de monseigneur Bernabo. Si espousa la ditte dame le lundi apriès le jour de le Trinité, l'an de grâce mil CCC et LXVIII, en le bonne cité de Melans.'

[3] Abbeville at this time belonged to England. A year later (April 29, 1369), it was captured by the French (Kervyn 7. 309-12, 537; cf. 17. 469).

[4] These particulars in Rymer, under date of May 10; cf. above, p. 29, note 12.

[5] A couple of thousand, according to Froissart (see above, note 2).

[6] As they very likely would not have traveled on Good Friday, April 7, another day may well have been required.

[7] *Grandes Chroniques de France,* ed. Paulin Paris, 6. 251.

87 miles in six days[8]—Monday to Saturday—this would be at the rate of 14½ miles a day, which corresponds pretty nearly to what we have assumed for the journey, Calais to Abbeville. Now the ferriage across from Dover to Calais would have required a day, April 4. At the rate of 14½ miles, it would require a day from Canterbury to Dover, and four more for a leisurely progress from London to Canterbury.[9] On the basis of this calculation, the array may have left London early on Wednesday, March 29, arrived at Canterbury on Palm Sunday, April 2, and thus reached Dover on April 3. If, however, they made a leisurely and showy progress from London, they may easily have consumed more time on the road, and thus have made an earlier start, perhaps as early as Monday, March 27.

At Paris, or rather St. Denis,[10] Lionel was met by the brothers of King Charles V (1337-1380), the Dukes of Berry[11] (1340-1416) and Burgundy[12] (1342-1404); the king's brother-in-law,

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[8] Froissart says: 'chevaucha tant par ses journées.' Albert von Stade (13th century) reckons five days from Abbeville to Paris (*Jahrbuch für Schweiz. Gesch.* 4. 284-6).

[9] See *Hist. Background*, p. 166, note 3.

[10] There at least by the two brothers of the king (*Grandes Chroniques*, as above).

[11] John, Duke of Berry, was hostage in England 1360-66; in 1396 he negotiated a truce with Richard II, and arranged for the latter's marriage with Isabella, his niece, then only a child of six; when the future Henry IV was banished in 1398, a match was considered between him and Berry's daughter, and Berry was deep in his counsels respecting his return to England (*Dict. Nat. Biog.* 26. 34). At his death he left vast treasures of jewelry, objects of art, and especially illuminated MSS., many of which have been preserved, one of the finest being his *Livre d'Heures* (*Encyc. Brit.*, 11th ed., 3. 809). At the time of Lionel's visit, he was on leave from Edward III to June 24 of that year (Kervyn 7. 517). Cf. Froissart, *Dit dou Florin* 317-330.

[12] Philip the Bold, Duke of Burgundy, had distinguished himself at Poitiers (1356); on the defeat of his father, King John, he accompanied him (1357) into captivity in England, where he mostly remained till his release in 1360. After the death of Charles V in 1380, Philip for a time occupied the most powerful position in France. A contemporary described him as kindly and amiable to men of every degree, liberal and magnificent. His splendid tomb is in the museum of Dijon (*Encyc. Brit.*, 11th ed., 24. 493). Cf. Froissart, *Dit dou Florin* 317-330.

Louis de Bourbon[13] (1337-1410); Enguerrand,[14] Lord of Coucy (1338-1397), brother-in-law of Lionel, and Count Amedeo VI[15] of Savoy (1334-1383), the uncle of Lionel's betrothed, and the one who had perhaps been chiefly instrumental in arranging the marriage.[16] Lionel was provided with a richly adorned apartment at the Louvre,[17] where the king was in residence. On Sunday he dined and supped there; on Monday he dined with

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[13] Bourbon was a hostage in England 1360-66 (Kervyn 7. 517-8). Though, on the death of Charles V, he, with the Dukes of Anjou, Berry, and Burgundy, assumed the guardianship of Charles VI, he had never had the opportunity to play a part befitting his high birth (Le Roulx, p. 170), until, in 1390, he assumed command of the expedition directed against Mehediah, in northern Africa (see the account in Le Roulx, pp. 166-200; cf. *Hist. Background,* p. 209, notes 5 and 6). See Froissart, *Buisson de Jonece* 291-3.

[14] Sometimes known as Ingelram de Coucy. The pride of his house appears in the well-known lines:

> Je ne suis roi, ni prince aussi;
> Je suis le seigneur de Couci.

He was related to the Green Count by their common descent from Amedeo V of Savoy (d. 1323), of whom Coucy was the great-grandson, and Amedeo VI the grandson. He was married to Isabella (1332-1379), eldest daughter of Edward III, in 1365, she being six years older than her husband; in the same year he received the Order of the Garter. 'On the eve of the renewal of the war between England and France in 1368, Enguerrand, unwilling either to break with his father-in-law or to fight against his lord the French king, went to Italy, and served in the wars of Urban V and Gregory XI against the Visconti' (*Dict. Nat. Biog.* 29. 68; cf. Muratori 8. 361; *R. I. S.* 15. 497; 16. 518; Giulini 5. 559, 560), remaining there till about 1374 (see also Beltz, *Memorials of the Order of the Garter,* pp. 149-153; Kervyn 7. 419-420). Cf. Kervyn 14. 3, 4; Froissart, *Dit dou Florin* 442-4; *Buisson* 278-281; Le Roulx, Index; *Mém. de l'Acad. des Inscr.* 25. 168-186.

[15] Symonds (*Age of the Despots,* chap. 2) says that the rulers of Savoy and Montferrat are in the highest class of despots, and Gabotto (*Atti della Reale Accademia delle Scienze di Torino* 34. 215) calls Amedeo 'that giant among the sovereigns of Savoy' (from which, of course, the reigning house of Italy is descended). Referring to his exploits in the East in 1366 (see below), Gregorovius (*Gesch. der Stadt Athen.* 2. 163) speaks of 'how much a heroic man could accomplish, even with meagre forces.' For the romantic story of the origin of his name (the Green Count) in 1348, see Cordey, pp. 100-101, and *M. H. P.* 3 (*Script.* 1). 275-8. (For a Spanish green knight at the siege of Tyre by Saladin in 1187, see *Chronique d'Ernoul et de Bernard le Trésorier,* ed. Mas Latrie, pp. 237-8, 251-2; Röhricht, *Gesch. des Königreichs Jerusalem,* p. 468; for seven green knights who tourneyed in 1305 on the site of the Isthmian games, see Miller, p. 203; Rodd 2. 54; *Chronique de Morée,* ed. Longnon, p. 397; in Malory there is a green knight, Sir Pertilope, besides a black (see also Chrétien de Troyes, *Cligès*), a red, and a blue knight; Tristram is a green knight in Tennyson's *Last Tournament* 169-170). For the

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account of his heroic expedition to free his cousin, John Palæologus, Emperor of Constantinople, in 1366, see Kervyn 11. 233-4; *M. H. P.* 3 (*Script.* 1). 300-370; Datta, *La Spedizione in Oriente di Amedeo VI* (Turin, 1836); Le Roulx, pp. 141-158; Hertzberg, *Gesch. Griechenlands* 2. 309, 320, 322; C. Hopf, *Griechenland im Mittelalter und in der Neuzeit*, in Ersch und Gruber's *Allgemeine Encyklopädie* (Leipzig, 1868), Part 86, pp. 14-15 (it is interesting that in Mantua, on his return from the East, he had with him, according to Datta, three falcons and a small lion; cf. *Hist. Background,* pp. 171, 174). His itineraries on his return are given by Datta (pp. 162-3, 170-171), who notes that he reached Pavia Nov. 14, and Chambéry Dec. 10.

For Amedeo in general, see Froissart, *Dit dou Florin* 330-339, and cf. pp. 23-5, 36, 49, 59, 85, 99, 100, 102, 107.

[16] So Cordey, p. 183: 'Ils [Violante's father and mother] s'adressèrent sans doute au Conte de Savoie. . . . Il fut assez heureux pour décider Édouard III à marier son fils Lionel, duc de Clarence, avec la princesse milanaise.' On Nov. 22, 1366, Galeazzo had transferred to Amedeo three towns—a fact which Cordey regards as significant in this connection.

Amedeo came to Paris to meet Lionel, but this was not his sole motive. We find that on the very day of Lionel's arrival, Amedeo received the promise of 50,000 gold florins from the king by way of indemnity for the war of Faucigny in 1355; and we have even a list of his expenditures for a variety of costly articles, among the rest for a hat adorned with a ruby and large pearls, destined for the king, which cost 1000 florins (Cordey, pp. 184-5). At Paris he met Guillaume de Machaut, then 70 years old, who presented him with a romance (perhaps his *Livre du Voir Dit,* composed a few years earlier), and received by way of gratuity the by no means inconsiderable sum of 300 golden francs (Cordey, p. 185).

It is therefore possible that here Machaut, Froissart, and Chaucer met; this conjecture is of interest in view of Chaucer's imitation, in the *Book of the Duchess,* of Froissart's *Paradys d'Amour,* which itself imitates Machaut's *Dit de la Fontaine Amoureuse* (Kittredge, in *Eng. Stud.* 26. 336; cf. *Pub. Mod. Lang. Assoc.* 30. 1). For imitations by Chaucer of Machaut, see Wells, pp. 620, 629, 633, 634, 638, 668; Kittredge in *Mod. Phil.* 7. 465 ff.; *Pub. Mod. Lang. Assoc.* 30. 1-24.

[17] Hare, *Walks in Paris,* pp. 36-37: 'On the site of a hunting lodge, . . . Philippe Auguste in 1200 erected a fortress, to which St. Louis added a great hall, which was called by his name. The fortress was used as a state prison, and its position was at first outside the city,

the queen[18] at the king's hostel near St. Pol,[19] where she was staying, 'et y fist l'en très grant feste.' After dinner, when

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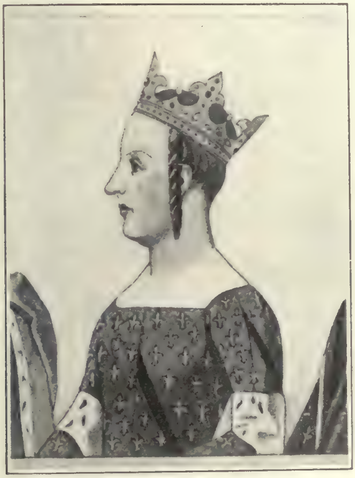
in which it was enclosed in 1367. . . . The Louvre was greatly enlarged by Charles V, who added many towers, and surrounded it with a moat which was supplied from the Seine. He made the palace into a complete rectangle, always preserving the great central dungeon tower. In spite, however, of his additions, space was wanting in the labyrinthine apartments of the Louvre for his splendid receptions, . . . so he only inhabited the fortress for a short time, and devoted himself principally to building the Hôtel St. Paul.'



Jeanne de Bourbon, Wife of Charles V.
(From Racinet, *Le Costume Historique,* Vol. 4.)

[18] Whom Delachenal (I. 44) calls one of the most gracious figures of the 14th century. As to her picture, her cote-hardie has the color and the arms of France; only on ceremonial occasions was it cut so low in the neck. The crown is of gold, set with precious stones. See also p. 50.

[19] Cf. Hare, *Walks in Paris,* pp. 201-2: 'Every preceding king had held his Court either in the Cité or at the Louvre, but Charles now bought, near the Port de St. Paul, the hotel of the Conte d'Étampes. . . . In 1363 he added to his purchase the hotel of the Archbishop of Sens, with gardens which reached to the Port. . . . By an edict of July, 1364, Charles V, after coming to the throne, declared the Hôtel de St. Paul

they had danced and played—the king's brothers being always

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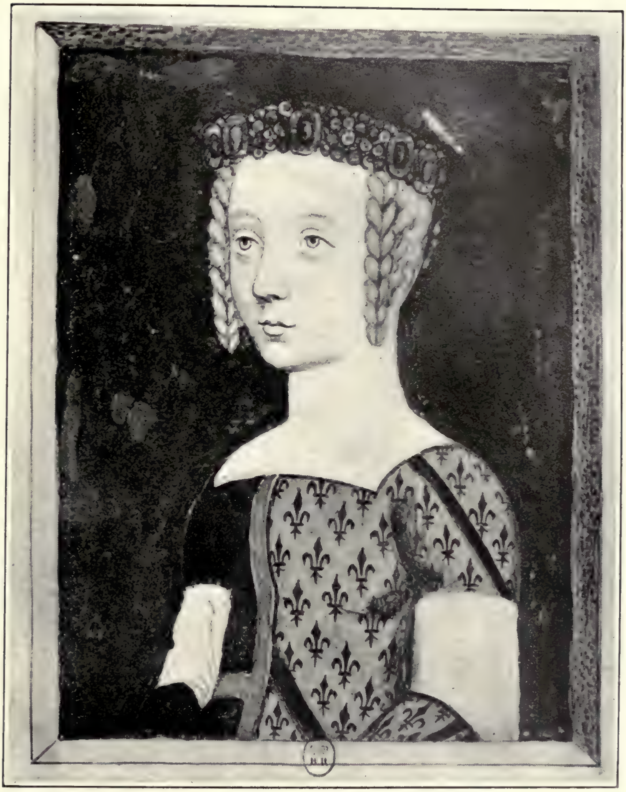
to be for ever part of the domain of the Crown—the hotel where "he had enjoyed many pleasures, endured and recovered from many illnesses, and which, therefore, he regarded with singular pleasure and affection." No plan of the Hôtel de St. Paul has come down to us, but we know that it was rather a group of palaces than a single building, the Hôtel de Sens being the royal dwelling-place, . . . the Hôtel d'Étampes being called Hôtel de la Reine. . . . The palace as a whole was surrounded by high walls, inclosing six meadows, eight gardens, twelve galleries, and a number of courts. . . . The garden walks were shaded by trellises covered with vines. . . . In their shade Charles V amused himself by keeping a menagerie, and many accounts exist of sums disbursed to those who brought him rare animals. Here the queen and her ladies appeared in the new dress of the time, in which their own arms were always embroidered on one side of their gown, and their husbands' on the other.' Cf. Michelet 5. 43-4. From this residence Charles could see, two years later, the flames of the villages which the English were burning (Michelet 5. 31; Lavisse 4.^{1} 235).

Add *Encyc. Brit.*, 9th ed., 18. 189: 'He [Charles V] robbed the Louvre to some extent of its military equipment, in order to make a convenient and sumptuous residence; his open-work staircases and his galleries are mentioned in terms of the highest praise by writers of the time. This did not, however, remain always his favorite palace; having built or rebuilt in the St. Antoine quarter the mansion of St. Paul or St. Pol, he was particularly fond of living in it during the latter part of his life, and it was there that he died in 1380.'

These reunions must have had much the air of a family party. There were present Lionel's brother-in-law and his prospective uncle. Then, since the king's sister, Isabella, had been married, eight years before—she was now only 19 years old—to Gian Galeazzo (a marriage probably negotiated by Amedeo; cf. Cordey, p. 155), the brother of Lionel's betrothed, that would make her sister-in-law to Lionel, and thus tend to create a fraternal feeling with Berry, Burgundy, and the king, and more remotely, through the king, with the queen and her brother, Bourbon. Moreover, since Amedeo had married Bonne de Bourbon in 1355 at the Hôtel St. Pol, he was at table with his sister-in-law, the queen (once almost betrothed to him; Delachenal 1. 26-27), and his brother-in-law, Louis de Bourbon, by whom the Green Count's wife was much beloved (Kervyn 1.^{2} 163, note).

These ties would be strengthened by the residence of Berry, Burgundy, and Bourbon in England, where, though they were detained as hostages, they can have known little of the horrors of imprisonment. The father of the three royal brothers, King John (1319-1364), after his defeat at Poitiers, was in England as a captive for three years (1357-60), yet, after more than three years of liberty, while his ransom was still unpaid,



Bonne de Bourbon, wife of Amedeo VI of Savoy.
(From Cordey, frontispiece.)

in his company—they retired, and afterwards supped with the

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he voluntarily returned to England (January, 1364) in the spirit indicated by the following quotations from Froissart (Kervyn 6. 387, 389, 390, 392, 393; second redaction in square brackets):

> 'Li roys Jehans avoit proupos et affection d'aller en Engleterre veoir le roy englès, son frère, et madame le royne, sa soer (enssi s'appelloient-il par le tretiet de le pès), et ordonnoit touttes ses pourvéances et ses besoingnes à Boulloingne. Si le conseilloient bien li aucun de Franche qu'il ne volsist mies aller, et que c'estoit ungs grans périls sus le veu et prommesse qu'il avoit fait, et que on le poroit là détenir pour le somme de se rédemtion qui estoit encorres à payer; mès li roys Jehans respondoit qu'il avoit trouvet ou roy d'Engleterre, en madame le royne, en tous leurs enffans et ens ès barons d'Engleterre tant d'onneur, d'amour, de courtoisie et de loyaulté, qu'il ne s'en doubtoit en riens et qu'il ne cesseroit jammais, si y aroit esté et yaux veus, et ossi ses amis qui là estoient hostagiers pour lui. . . .
>
> Quant il fu venus à Eltem [Eltham], en l'ostel dou roy englès, il y fu rechups à grant joie, che puet-on moult bien croire, et tout chil qui avoecq lui estoient, pour l'amour de lui. Là eult grans festes, grans sollas, grans esbatemens, belles danses et belles carolles de seigneur, de dame et de damoiselle [et là estoit li jones sires de Couci qui s'efforçoit de bien danser et de canter quant son tour venoit], et s'efforchoit chacuns de festyer et de jeuer pour le cause dou roy de Franche. Quant il eut là estet, je croy II jours, il s'en parti et vint à Londres, où il fu requeilliés moult honnorablement et menés et aconvoyés de ses cousins les enfans dou roy englès, jusques à l'ostel de Savoie qui estoit ordonnet pour lui, qui siet sus le Tamise au dehors de Londres. Là le laissièrent-il, et là se tint li roys Jehans et tout son hostel. Si avoit dallés lui chiaux de son sanch, le duch de Berri, son fil, le ducq d'Orlyens, son frère, le conte d'Allenchon, Robert d'Alençon et Gui de Blois, ses cousins, qui adont estoient jone damoisel, ossi le ducq de Bourbon et le conte de Saint-Pol et les seigneurs qu'il avoit là amenés de Franche. Si tenoit là li dis roys et tint là l'ivier grant estat et grant hostel, et estoit souvent visetés dou roy englès et de ses enffans [et le visetoient souvent li rois d'Engleterre et si enfant li dus de Clarense, li dus de Lancastre et messires Aymons]. Si donnoient chil roy grans disners et grans soupers li uns à l'autre, et jeuoient et esbatoient enssemble et parloient et consilloient de leurs besoingnes. . . . Enssi passoient li roy le temps, et veoient souvent l'un l'autre, et donnoient et envoioient li uns à l'autre grans dons, biaux jeuiaux et riches présens pour nourir entr'iaux plus grant amour.'

Here it is explicitly related that he was often visited by Lionel (named first), John of Gaunt, and Edmund.

king.[20] On Tuesday, the two dukes entertained him and his knights at dinner and supper at the Hôtel d'Artois.[21] Among those present at the banquet, besides the nobles mentioned above, the Counts of Armagnac, Eu, and Étampes, Robert d'Alençon, Constable of France, the Archbishop of Sens, and the Bishop of Nevers.[22] That night he slept at the Louvre, and on Wednesday dined and supped again with the king, who bestowed upon

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In Lionel's visits to King John, with whom were the Dukes of Berry and Bourbon, the Counts of Eu and Tancarville (see Kervyn 6. 388), and Robert d'Alençon (the last three mentioned below), there would have been only a renewal of the graceful courtesy he, in conjunction with two of his brothers, had shown the king in 1360, on his release at Calais. King John's first act then was one of devotion. Grateful for his deliverance, he decided to perform a pilgrimage, barefoot, to the shrine of Notre Dame at Boulogne (where the future Charles V offered, July 2, 1362, five candles, each weighing 32 pounds; Delachenal 2. 312; cf. Michelet 5. 28), twenty miles distant. Immediately Lionel, then 21 years of age, the Black Prince (30), and Edward III's fifth son, Edmund (19), offered themselves as his companions. They started on the morning of Oct. 27 (Coville, in Lavisse $4.^1$ 156, says that King John left Calais on Sunday, Oct. 25), and, all barefoot alike, walked the distance so briskly that they were at Boulogne before dinner. The religious ceremony over, they abandoned themselves to merry-making. The next morning early the three princes returned to Calais, where their father was awaiting them, and whence they sailed for Dover on Oct. 31 (Kervyn 6. 320-1).

Another bond uniting these table-mates was their youth. The eldest, the Green Count, Lionel's future uncle by marriage, was only four years older than Lionel; the king and Bourbon were a year older; the queen and Coucy of the same age; Berry, two years younger; and Burgundy, four years younger. Thus everything must have favored a joyous abandonment to the pleasure of the moment. Yet Michelet (5. 22-23) points out that at this moment the English companies of adventure were ravaging Champagne, and from there to the very suburbs of Paris. Elsewhere (5. 34, 35) Michelet speaks of the egregious pride and ambition of the English.

[20] *Grandes Chroniques,* as above. For the festivities in France at this period, see De Noirmont (1. 93): 'Malgré les désastres de Crécy et de Poitiers, le règne des premiers Valois [1328-1380] fut l'apogée de la royauté féodale. Leur cour était une fête éternelle, une brillante imitation de la Table ronde du roi Arthus. Dans les intervalles des grandes guerres, banquets, tournois, et chasses splendides s'y succédaient sans interruption.'

[21] *Op. cit.,* pp. 251-2.

[22] Cordey, p. 184.

him and his companions gifts[23] to the value of more than 20,000 florins.[24]

2. PARIS TO CHAMBÉRY

On Thursday Lionel left Paris, accompanied by Jean de Melun, Count of Tancarville[25] (d. 1382), as far as Sens, some 60 miles distant; from this point other knights attended him to the boundary of France,[26] probably Châlon-sur-Saône.

Froissart seems to say, in his first redaction,[27] that the Green Count accompanied Lionel from Paris to Milan. This, however, would be an error. Amedeo preceded Lionel, probably by only a single day, taking the route by which he had come, and which Lionel no doubt followed—by Villeneuve-sur-Yonne, Auxerre, and Châlon-sur-Saône, where France bordered on Franche-Comté, to which point, about 180 miles from Paris, a herald of the king accompanied him.

Lionel followed, as we have seen, on April 20. He must have arrived at Chambéry, about 290 miles from Paris, either May 11 or 12.[28] On his route, after Mâcon and Pont-de-Veyle, lay Bourg-en-Bresse (made famous by Matthew Arnold's *Church of Brou*), where he may have arrived on May 8.[29] Here he was doubtless feasted for a day or more, after which he proceeded by way of St. Rambert and Belley to Chambéry (about 30 miles from Bourg).[30] Messengers had been sent out in various directions to ascertain and report to Amedeo the arrival of Lionel at his various stopping-places,[31] and no doubt also to invite the nobility of Savoy to the festivities at Court. There must have been brilliant receptions of Lionel at various towns through which he passed,[32] but of these we know nothing in detail. It is certain, however, that all these were surpassed by the gayety and splendor at Chambéry, which, according to Froissart, lasted two days.[33] He it was who, as a spectator and participant, not only characterized these 'revelries of dance, roundelay, and all manner of game' in his prose,[34] but has left us a detailed account of them in his *Prison Amoureuse*.[35] There were present a hun-

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[23] *Grandes Chroniques*, p. 252.

[24] Reckoning the florin at 3 shillings, this amount equals £3000, which, somewhat arbitrarily reckoned on the basis of £1 = $75 (see *Hist. Background*, p. 166), = $225,000.

[25] A famous hunter, brother of the Archbishop of Sens (Delachenal 2. 84), grand master of the royal household, and of the woods and waters of France.

[26] *Grandes Chroniques*, p. 252.

[27] See p. 31.

[28] Messengers had been awaiting his arrival at Mâcon for some time in April, and several days in May.

[29] On that date payment was made to several workmen who had been making preparations for Lionel's reception in that town.

[30] Isabella of France, traveling southwards in September, 1359, spends two days at Pont-de-Veyle (Sept. 6-8), reaches Bourg on the 8th, and Belley on the 10th, whence she was conducted by way of Hautecombe and Bourget to Chambéry (Gabotto, *Rendiconti della Reale Accademia dei Lincei* 5. 8. 85).

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[31] Cordey, p. 186.

[32] Froissart, above, p. 31.

[33] Above, p. 31. If Lionel arrived at Chambéry on Friday, May 12, then the feasting must have occupied Saturday and Sunday, the 13th and 14th, leaving him free to depart on Monday, the 15th. But as Froissart elsewhere says (*Prison Amoureuse* 384) three days, this is perhaps quite as likely, in which case we may assume that the days so spent were Friday, Saturday, and Sunday, May 12-14. Holinshed (*Chronicles,* London, 1807-8, 2. 685-6), following, or mistranslating, a text of Froissart, even says, 'there he remained foure daies'; but this may be meant to include the day of arrival or departure, or both.

[34] See above, p. 31.

[35] I subjoin lines 354-423 (*Poésies,* ed. Schéler 1. 221-4), though only lines 364^b-411(?) refer to the festivities at Chambéry:

> Là estoient li menestrel,
> Qui s'aquitoient bien et bel
> A piper, et tout de nouvel,
> Bones danses teles qu'il sceurent.
> Et si trestost que cessé eurent
> Les estampies qu'il batoient,
> Chil et chelles qui s'esbatoient
> Au danser, sans gaires atendre,
> Commenchierent leurs mains à tendre
> Pour caroler. Là me souvint
> D'un tamps passé: jà il avint
> En Savoie, en le court dou conte,
> De qui on doit bien faire compte,
> Car il est nobles et vaillans,
> D'onneur faire aigres et taillans,
> Celle grasce li portent tuit.
> L'an mil CCC sissante et uit
> Fu que passa parmi sa terre

dred and twenty beautiful young women, wives and daughters of knights, richly clothed. For the dances and carols Froissart himself supplied words. When the minstrels ceased, the ladies never stopped, but continued their roundelays hand in hand. Hardly had one lady finished a virelay than another began a new one, for new and good were many of these songs.

Li uns des enfans d'Engleterre,
Lions, fils Edouwart le roi,
En très noble et poissant arroi;
Et li contes que j'ai nommé,
Qu'on claime ou qu'on clamoit Amé,
Honnourablement le rechut.
Là fu bien, qui l'estat conchut,
Et l'ordenance et le maniere
De la court qui fu moult pleniere,
Les disners, les belles assises,
Les tables ostées et mises,
Les vins, les viandes, les més.
Trois jours dura la feste; mès
Il y eut danses et carolles,
Pour quoi j'ai empris les parolles,
Car bien .VI^{xx}. jones et belles,
Toutes dames et damoiselles,
Filles de chevaliers ou fames,
Dou pays les plus frices dames,
Moult ricement et bel arrées,
Très noblement et bien parées
En draps de canjans et de soie,
Plus rices deviser n'osoie,
Drut perlées et orfrisies,
Dont le mieuls estoient prisies,
Y peuïst on adont veoir.
Cure n'avoient de seoir,
Mès de danser à l'estrivée;
Toute joie y ert arivée,
Et quant li menestrel cessoient,
Les dames pas ne se lassoient,
Ains caroloient main à main
Tout le soir jusqu'à l'endemain.
Et quant chanté li une avoit
Un virelay, on ne savoit
Encores s'il avoit fin pris,
Quant uns aultres estoit repris
Ou de dame ou de damoiselle.
Mainte canchon bonne et nouvelle

3. CHAMBÉRY TO PAVIA

From Chambéry on, Lionel was accompanied by Amedeo of Savoy.[36] They must have begun their journey on Monday, May 15, since we find them at Aiguebelle, 23 miles from Chambéry, on May 16.[37]

On y chanta et respondi.
A celle fin je le vous di:
A la feste ossi où j'estoie,
Quant avoec celles m'esbatoie
Et chiauls de qui la compagnie
Estoit moult bien acompagnie,
L'une apriès l'autre sans detri
Chantoient si com par estri.
Là fu mon virelay cantés
Et moult volentiers escoutés,
Mès à painnes peut il fin prendre,
Quant ma dame en volt un reprendre
Qu'onques mès je n'avoie oï.

[36] Keryyn, 7. 247; see above, p. 31.

[37] Cordey, p. 187, note 1. Cordey says they went by the Mont Cenis, but strangely enough adds that they had a guide as far as Aosta, which, if true, would indicate that they crossed by the Little St. Bernard. That the passage was regularly made by the Mont Cenis is clear enough. Thus the French princess, Isabella, crossed by this route (Gabotto, *Rendiconti,* p. 87): Sept. 15, Montmélian and Aiguebelle; 16, Aiguebelle; 18, St. Michel; 19, Les Fourneaux; 20, Lanslebourg; 21, Susa, the distance from Chambéry to Susa being 83 miles. In 1359, the Green Count traveled as follows (Gabotto, p. 80): Sept. 11, Chambéry; 11, Montmélian; 13, Aiguebelle; 13-15, La Chambre, St. Michel, Les Fourneaux, Lanslebourg. In 1393, Henry, Earl of Derby, traveled in the opposite direction (*Derby Accounts,* ed. L. T. Smith, p. lxxviii): May 25, Susa; 26, Lanslebourg; 27, St. Michel; 30, Aiguebelle; 31, Chambéry. Ruskin walked from Susa to Lanslebourg, 23 miles, in one day, Sept. 1, 1858 (see Library Edition 35. 498); for his description of the scenery at Lanslebourg, June 2, 1841, see *op. cit.* 35. 296-7, cf. 1. xli; for his description of the country about Susa, 36. 231-2 (letter to Miss Siddal of Jan. 27, 1856). Summing up the foregoing itineraries, we have: Isabella's journey, Chambéry to Susa, 6 days, besides one day for rest, apparently; Amedeo's journey, Chambéry to Lanslebourg, 5 days, with one to spare for Susa; the Earl of Derby's, Susa to Chambéry, 7 days. We might therefore assume that Lionel would have been at St. Michel on May 18, at Lanslebourg May 21, and at Susa May 22, though it must always be remembered that his party was large, and that he might therefore have been delayed. However, May 22 is none too early, considering

From Susa the English probably advanced by way of Vercelli and Novara[38] to Pavia.[39] Here they would have been entertained at the Castello, which had been begun by Galeazzo in 1360, and completed in 1367. The earliest historian of Milan calls this building 'the first in the world,'[40] and Symonds declares[41] that it was 'the noblest dwelling-house in Europe.'[42] It is particularly interesting in its possible relation to Chaucer, who, if we may credit the statement of Gioffredo della Chiesa, writing between 1430 and 1440, may have seen painted on its walls the story of Griselda.[43] For the tower of Boethius, see Magenta, opp. p.

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that from Susa to Pavia, even by way of Turin, is not less than 120 miles, and that from Pavia to Milan is 20 miles more. Now we know that on Saturday, May 27, Lionel's train entered Milan.

Cordey (as above) assumes that the journey over the Mont Cenis occupied May 15 to 18. Gabotto, on the other hand, says explicitly (*Misc. di Stor. Ital.* 33. 168-9) that Lionel was at Susa on May 17, from which place Amedeo issued summonses to the communes of Savoy and Achaia (here meaning Piedmont) to send representatives to Rivoli with reference to a reform of the country. Cordey (1911) writes later than Gabotto (1895), and then Gabotto is sometimes inaccurate: thus he assigns April 6, instead of 16, for Lionel's arrival at Paris.

[38] At least this was the route pursued by Isabella (see p. 42) in 1360 under the same guidance (*R. I. S.* 16. 405); the Bishop of Novara may also have joined them at that city (see p. 59). Vercelli and Novara were among the cities inherited by Galeazzo in 1354 (*R. I. S.* 16. 337).

[39] So *Chron. Plac.*

[40] Corio, p. 466.

[41] *Age of the Despots,* chap. 2. The hand of man has since dealt harshly with it; see Murray, *Handbook for Travellers in Northern Italy,* 3d ed., 1847, pp. 206-7. For a remarkable duel which took place in its courtyard on June 24, 1399, see Magenta 1. 242-5.

[42] See the delineations of it in Magenta, opp. p. 74; for its magnificent park, several miles in circumference (cf. *Hist. Background,* p. 186, note), see Magenta, opp. p. 118; cf. Rosmini 2. 116.

[43] *M. H. P.,* p. 861: 'La historia de Griselidis, Marchexa de Salucio, he [è] stata depinta ab antiquo nel Castello di Pavia, la quale era sedya regale di coloro.' Gioffredo's statements dispose of Westenholz's denial (*Die Griselidis-Sage in der Literaturgeschichte,* p. 4). The question arises, however, whether these walls were those of the new castle, or those of the older one built by Matteo I between 1315 and 1322 (*R. I. S.* 16. 379, 696). However, Chaucer may easily have seen both, for the old castle was left standing when the new one was built (*R. I. S.* 16. 379: 'Apud Castrum antiquum, erectum per quondam Dominum Matthæum, aliud Castrum mirabile fecit de novo erigi'). Which castle we suppose

162. For other sights in Pavia, see pp. 80, 92. A plan of the city in 1590 is in Magenta, opp. p. 1.

4. PAVIA TO MILAN

By the time Lionel left Pavia for Milan, his retinue would doubtless be composed, in addition to the 457 men with whom

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Gioffredo to have meant depends upon the interpretation we assign to the words 'ab antiquo.' If he wrote in 1437 (say), might he have regarded a period two generations earlier, in 1366, as ancient, or must we assume that he would have reserved this designation for a date (say 1316) 50 years earlier? That the story of Griselda did not gain its earliest currency from the classic form into which it was cast by Boccaccio and Petrarch is suggested by Gioffredo's statement that he himself was acquainted with it in three languages—Latin, Italian, and French (*op. cit.*, p. 861: 'La quale se trova in historia, et in Latino et in Franzoso e Italiano, che noi medemy habiamo veduta in questy tre idioma'). It is of course possible that he is here referring to Boccaccio's narrative, Petrarch's version, and a French translation (perhaps that of 1414). Against this hypothesis it may be urged that, since he is arguing for the Germanic origin of such names as Walter and Griselda, and therefore stressing the notion of antiquity (*ib.*: 'Et credemo che ly marchexi di Salucio che erano in anty fusseno ancora discesi da quely Saxony et Longobardy. Et molte cosse presumere me lo fano: prima, questy nomy come Manfredo, Adalayda, Valterio, Griseldis, e simily nomy che tirano sopra quely nomy di coloro, e sono inusitati'), he is not likely to have appealed to a version as modern as Petrarch's in support of such a theory. That there were earlier accounts than Boccaccio's is clear from the fact that Petrarch testifies (*Sen.* 17. 3) that he had often heard the story long before 1373, and that one of his reasons for translating Boccaccio's account was to render it accessible to people who knew no Italian ('Cogitatio supervenit, fieri posse ut nostri etiam sermonis ignaros tam dulcis historia delectaret, cum et mihi semper ante multos annos audita placuisset, et tibi usque adeo placuisse perpenderem, ut vulgari eam stilo tuo censeris non indignam'), the context making it perfectly evident that he is referring, not to Boccaccio's literary reproduction, but to a popular tale, such as might be related by minstrels.

There always remains the possibility that Galeazzo, after Petrarch had written his Latin version by June 8, 1373, and before his own death in 1378, had these frescoes executed, out of regard for Petrarch's memory. There is nothing in the relations between the ruling house of Saluzzo and the Visconti to discredit such a supposition, seeing that in April, 1365, Federigo II, Marquis of Saluzzo (d. 1396), acknowledged that he held his marquisate of Bernabò (*M. H. P.*, pp. 1010-11), and that ten years later he looked to Galeazzo and Bernabò for defense against his he started from Dover,[44] of a comparatively few persons who had gone to Italy on his business in the months immediately preceding,[45] and in large measure of detachments from the bands of Englishmen then serving as mercenaries in Italy. One proof of the latter is that so many of his followers were armed with great bows[46] and shields,[47] which is somewhat easier to understand of the local forces than of those which had come with him from England; another is that *Cron. Monf.* (p. 1212) speaks of the English in Lionel's train (presumably such mercenaries) as having greatly prevailed against the resistance of the Emperor Charles,[48] and as having done infinite damage in the lands of the state of Milan.[49]

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enemies (*M. H. P.*, p. 1023). But if the frescoes were executed after 1373, out of regard for Petrarch, would Gioffredo be likely to characterize them as ancient, and seem to know nothing of the story as told by Petrarch after Boccaccio?

It therefore appears (1) that if Gioffredo's 'ab antiquo' means any time between 1316 and 1367, Chaucer—supposing him to have been in Pavia—might have seen the frescoes; (2) if Gioffredo's 'ab antiquo' refers to a date after 1367 (or the earlier months of 1368), Chaucer might have seen the frescoes if he visited Pavia during his mission to Lombardy in 1378, or if perchance he made the two days' trip (Petrarch, *Sen.* 5. 1) from Genoa to Pavia in 1372-3. If in 1378, and the execution of the frescoes was due to the authority of Petrarch's version—for Boccaccio's direct influence need not be considered—Chaucer would undoubtedly have learned of Petrarch's agency in the matter, and would thus have been led to the latter's version, a copy of which, considering Galeazzo's relations with him, would surely have been in existence at Pavia.

[44] See p. 31.

[45] See *Cal. Pat. Rolls* for Nov. 23 and 30, 1367; Jan. 9 and Feb. 9, 1368.

[46] On these bows, see *R. I. S.* 16. 380.

[47] *Annal. Med.:* 'inter quos erant multi cum arcubus et targhettis'; *Frag.:* 'molti con gli archi grandi in forma d'una terretta' (*sic*); Corio: 'tra i quali molti haveano archi.' These archers, like the others, must have been on horseback, if we are to take literally Corio's *'dismontarono* nella corte.'

[48] Temple-Leader and Marcotti (*Sir John Hawkwood*) assign this to the month of May. They say (pp. 61-2):

> 'This prince had erected a new bastion at Borgoforte on the Po, and stationed an Italian garrison there, which by reason of old rancors had disagreed with the German mercenaries in Visconti's pay, and was reduced to evil case, so that Bernabò had to ride in great

On May 27,[50] the stately little army swept up from Pavia to Milan, about twenty miles, probably by way of Binasco. Some notion of the low meadows through which they passed may be

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> haste to the place, where—order being restored—he placed the bastion under the charge of Hawkwood's Englishmen. Then the Emperor Charles IV came down from the Alps, and made common cause with the d'Estes and other Italian princes against the Visconti, persuading them to attack Borgoforte. It must be noted that what between the Imperials (Bohemians, Sclavonians, Poles, Grisons, and Swiss), d'Este's Italians, those of Malatesta, and of Queen Joanna; and the Church party, which consisted of Bretons, Gascons, and Provençals; as many as twenty thousand combatants presented themselves before that fortress. In the army of Visconti were Germans, English, Italians, Burgundians, all with the firm determination to defend the bulwarks; in those days a small place, well provisioned and manned with a spirited garrison, might defy even "an army sufficient to subjugate Italy." To intercept succor, the d'Este party had launched on the Po a fleet of galleys and other boats, and the river being much swollen by the melting of the snows, the Imperialists bethought themselves of breaking the banks above Borgoforte; but the garrison knew how to save itself from the inundation, and returned it by breaking the banks towards the valley by night, thus flooding the plains of Mantua and the entrenchments of the Imperial camp. Charles IV was obliged to raise his camp, and shut himself up in Mantua; after which, on account of the damage he had suffered, and of the scarcity of provisions, he hastened to agree to Bernabò's terms.'

[49] This seems to be a reminiscence of an earlier condition of things. In a sketch of the earlier operations of the English adventurers—the White Company and others—Temple-Leader and Marcotti (*ib.*, pp. 12, 14, 15, 16, 17) say:

> 'Here then we behold the great English band marching towards the sea; attempting in vain to take Marseilles, they set fire to her suburbs, and pass by the Riviera to Nice; cross the Maritime Alps by the feudal estates of Malaspina, favored by Simon Boccanegra, doge of Genoa, and enemy to the Visconti; and thus descend into the valley of the Po. . . . The fact remains that Piedmont was devastated by the Hungarians, the Germans, and lastly by the newly arrived English. . . . The "Chronique de Savoie" says coldly, almost excusing them, that, being many, they could not live in Piedmont without spoiling the country, so that Conte Verde, who had imprudently counselled the Marquis of Montferrat to employ the English, repented, and took arms to defend himself. . . . By forfeiting the sum of 180,000 florins, Conte Verde obtained the restitution of his lands, and the English passed on to fight the

gathered from the following description of the route (reversed) which travelers followed in the first half of the nineteenth cen-

> Milanese under the Marquis of Montferrat, making their headquarters at Sicciano near Novara. . . . Conte Verde proposed an alliance with Galeazzo Visconti, with the object of driving out the English from their states, and dividing Montferrat between them, but it must be admitted that the undertaking to rout the English seemed very difficult to Visconti, for he was at the same time attempting to make a treaty of peace with them. Albert Sterz feigned to consent, by which means the English succeeded in making a fierce incursion, passing the Ticino, and pushing on to within six miles of Milan. It was night, and people in the castles and villages were keeping the New Year's festivities, while the Milanese nobles were having a merry time, playing at *tabulas et scaccos* (draughts and chess) unsuspecting and undefended, so that they were unable to prevent the robbers from taking anything and everything they chose. . . . They made prisoners of over 600 nobles, and would have taken more if ropes and time had not failed them. Some of the gang dragged behind them as many as ten nobles, together with their cattle; they could not save them all, because they were attacked by Visconti's boats in recrossing the Ticino, but it is said that with the money paid for ransoms, they pocketed about 100,000 florins.'

Among those in attendance on Lionel was very probably the famous *condottiere,* John Hawkwood, of whom Temple-Leader and Marcotti write (p. 60):

> 'In 1368 he had returned to the pay of Bernabò Visconti, together with William Boson [Bosson, *R. I. S.* 23. 555], conducting four thousand Englishmen. His passage into Lombardy was probably connected with the arrival there of Lionel, Duke of Clarence, son of Edward III of England, who came to celebrate his marriage with Violante, daughter of Galeazzo Visconti and niece of Bernabò*; and it is very likely that he went to pay homage at the court of his own Royal Prince, for we already know that all the English adventurers in Italy stipulated a clause in all their contracts affirming their loyalty to the King of England.'

The *Dict. Nat. Biog.* (25. 237) speaks of Hawkwood as drawn to Milan by the marriage, and adds: 'Shortly after the ceremony he, with four thousand men, entered the service of Bernabò Visconti.' The Milanese annalist says (p. 741) that this was in August. We know that Bernabò, as soon as Lionel's wedding was over, took some of the latter's men, tury (Murray, *Handbook for Travellers in Northern Italy,* 3d ed., 1847, p. 203):

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* The Milanese annals say in general terms that Lionel was accompanied by about 2000 English, amongst whom were many archers. Giovio and Litta positively affirm that Hawkwood was in the Duke's party, and the heraldic book of Samson Lennard, Bluemantle, confirms the fact.

> Quitting Milan by the Porta Ticinese, the road enters what may be termed the most Flemish portion of the plain of Lombardy. Meadows, rich in clover, yield two or three crops a year; thick rows of sallows and poplars bespeak the humidity of the soil, luxuriant even to rankness. On either side are frequent transverse or longitudinal cuts and canals. Of these the largest is the Naviglio[51] di Pavia, completed by the French, which joins the Ticino at Pavia. The road skirts this canal all the way.

As the festal company approached Milan, there issued from the Ticinese Gate a gorgeous procession to meet them.[52] This procession was headed by Galeazzo.[53] First came Bianca,[54]

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and returned to Guastalla, and thence went by boats to Borgoforte, which he captured and destroyed (Corio, p. 471). Borgoforte is on the northern shore of the Po, 7 miles south of Mantua; Guastalla on the southern bank of the Po, midway by rail between Mantua and Parma, and a dozen miles from Borgoforte.

[50] So *Annal. Med.; Frag.* Corio says May 17 (XVII for XXVII), but provides the means of correction by adding that it was the vigil of Pentecost.

[51] Cf. p. 11.

[52] *Annal. Med.;* Corio; *Frag.*

[53] According to Magenta (1. 156), following Jovius, Galeazzo was strong and handsome, tall, with fair and curling locks, friendly but keen looks, a white and delicate skin, and lofty bearing. Symonds says (*Age of the Despots,* chap. 2): 'Galeazzo was distinguished as the handsomest man of his age. He was tall and graceful, with golden hair, which he wore in long plaits, or tied up in a net, or else loose and crowned with flowers.' See his portrait on p. 17. For his character, cf. p. 16.

[54] Bianca (1336-1387), now 32 years old, was herself the daughter of a Violante (second child of Theodore Palæologus, Marquis of Montferrat), married to Aimon of Savoy (*Arch. Stor. Lombardo* 34. 6). Beautiful at the time of her marriage in 1350 (*M. H. P.,* p. 1180; Corio, p. 438), Bianca's character remained beautiful till her death. Magenta (1. 178-9) speaks of her ready intellect and unspeakable goodness of heart. Amid agitating vicissitudes, in victory and defeat, through all the excesses and crimes perpetrated by her husband and her son, she remained meek and untroubled, an exemplary wife and mother. Her native sweetness led her to innumerable works of charity, and, as far as in her lay, she mitigated the sufferings which Galeazzo inflicted (cf. *R. I. S.* 16. 550). Notwithstanding, Bernabò sent one of his creatures from Milan to Pavia to assassinate her when she should be walking in the park accompanied by none but her ladies, merely because she had tried to reconcile her brother with her husband (*R. I. S.* 16. 797). When the assassin returned

sister of the Green Count, and wife of Galeazzo; Isabella[55] of France, wife of Gian Galeazzo; and Ricciarda, wife of Andrea de' Pepoli.[56] These, and 80 ladies beside, were all dressed alike in cote-hardies[57] of scarlet,[58] with sleeves of white cloth[59] embroidered in trefoil-designs, and with gilded belts about their loins of the value of 80 golden florins. Next followed, under

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without having accomplished his purpose, Bernabò promptly had him hanged.

[55] Isabella was 19 years of age, having been born on Oct. 1, 1348 (Delachenal 2. 233, note 5). She was just over 12 when she was married to Gian Galeazzo on Oct. 8, 1360. It was she of whom Matteo Villani said (*R. I. S.* 14. 617-8; cf. Delachenal 2. 232, note 1): 'Who could have dreamed, considering the greatness of the crown of France, and the insignificance of the King of England compared with him who wore it, that he would be reduced to sell, as it were, his own flesh at auction?' The marriage, like that of Violante, had been brought about by Amedeo (*R. I. S.* 16. 505-6; Delachenal 2. 235). Villani (*R. I. S.* 14. 608) thus speaks of her demeanor on that 8th of October: 'Her attire and bearing were royal as she received homage from the [two] lords and their ladies; but she would not endure the cloth upon her head, and thus she stood until she was wedded. Then, laying aside her royal dignity and her nobility of blood, she did reverence to Galeazzo, Bernabò, and their ladies.' She was not to live long: four years after Violante's wedding (September, 1372), she died in childbed of her third son, Charles (Delachenal 2. 237). Her first child, a daughter, Valentina, was born in May, 1366 (Magenta 1. 129). The *Chronicle of Piacenza* (*R. I. S.* 16. 512, and so 748) calls her a noble woman, good, wise, humble, God-fearing, and virtuous, the mother of several excellent children, and declares that when she died, her like was not left upon earth. See also p. 110.

[56] See p. 27.

[57] See the pictures of Jeanne and Bonne de Bourbon, on pp. 35, 36, and cf. *Encyc. Brit.*, 11th ed., 7. 238. In the picture of Iseult (see p. 50), her gown is skyblue, edged with crimson bands at neck and elbow. The precious stones of her crown and pendant, and of the knight's garter, are probably rubies. Iseult's hair is golden. The knight's doublet is crimson.

[58] It is uncertain whether 'scarlatta' here denotes a color or not; *Frag.* has 'cotardia di scarlatto, con maniche dentro di scarlata bianca.'

[59] Such contrasting colors were also found in men's clothing at this period. Thus we are told (*Encyc. Brit.*, as above): 'A gentleman would have his coat parted down the middle in red and white, with hose of white and red to match.' And in the first reference that we have to Chaucer, April 4, 1357 (Kirk, *Life-Records of Chaucer IV*, pp. xiv, 153), he is down for a pair of red and black [breeches, probably]. See especially Chaucer, *Parson's Tale* 422-7. For some centuries before Shakespeare's time, the robes of serjeants at law were parti-colored, the

the leadership of Gian Galeazzo,[60] 30 knights and 30 squires, all dressed alike, and mounted on powerful tilting-steeds, with tilting-saddles. Then followed, mentioned by name, two of

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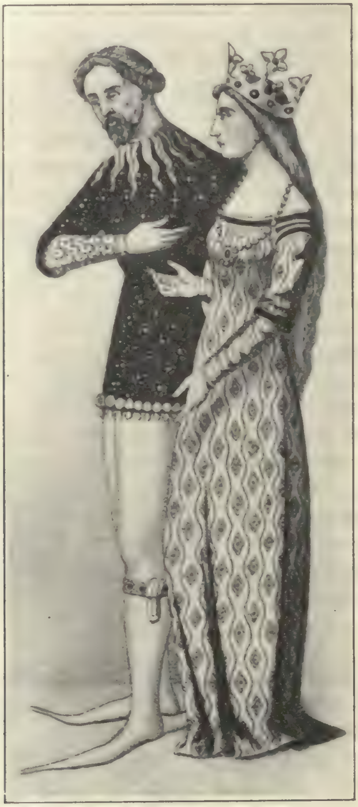
right-hand side one color, and the left another (*Shakespeare's England,* 1916, 1. 396-7). On the costume a little earlier, see Michelet 4. 226.



Iseult and a Knight of the Garter.

(From Racinet, *Le Costume Historique,* Vol. 4, reproducing an Italian manuscript of the 14th century.)

[60] Gian Galeazzo was now 16 years old, having been born at Milan on Oct. 15, 1351 (*Arch. Stor. Lombardo* 16. 923-938; 34. 61 ff.; Delachenal 2. 234, note 1; cf. *R. I. S.* 15. 468; 16. 723). Magenta describes him (1. 292) as tall, with light hair, broad forehead, and sparkling (*vivo*) eyes; his manner was at once grave and amiable, his speech easy and

Galeazzo's chief councilors,[61] and four of his vicars, arrayed like the preceding, but with belts of less value. Then five treasury-officials (*rationatores, ragionati*), also named, with their attendants; these were similarly arrayed, but with belts of silver. Finally, there was a bishop, with many clergy.

As they entered the old and famous city, the attention of the foreigners would naturally have been drawn to many a strange or renowned building. The procession would first pass S. Eustorgio, then lying outside the city-wall. Here, if any one had had the curiosity, he might have seen the sarcophagus which, until Frederick Barbarossa sent them to Cologne in 1164, had

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measured, and his temper mild; his plans exhibited a blending of magnificence, firmness, and eagerness; he displayed an ardent love for the beautiful and the sublime, and remarkable subtlety in divining the thoughts of others. For his character, see pp. 21-2.

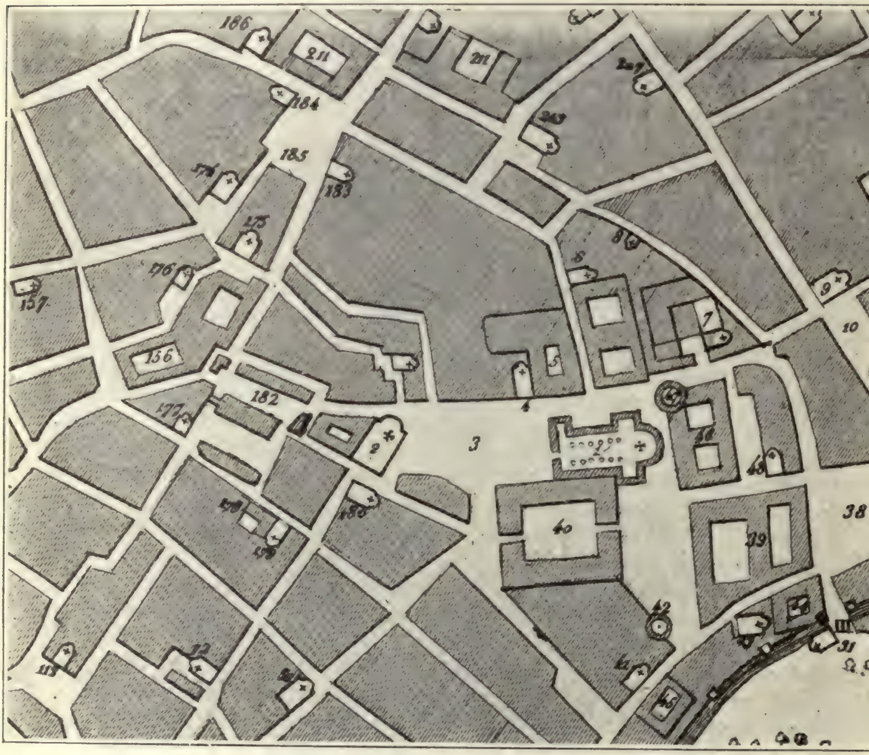
[61] It may seem strange that one of these was Manfredo di Saluzzo. What should a member of the reigning house of Saluzzo be doing here, serving Galeazzo in the administration of his state?

It came about thus. This Manfredo was the eldest son by a second marriage of Manfredo IV of Saluzzo (d. 1340), whose heir, by his first marriage, was Federigo I (d. 1336), who predeceased his father. The latter had sought, at the instigation of his second wife, to supersede Federigo by Manfredo, but the latter had been established by 1332-3 in the succession to the marquisate, which he left on his death to his son Tommaso. Meanwhile, Manfredo, on the death of his father, sought to oust his nephew, Tommaso, from the marquisate. At the end of the first six months Tommaso was deposed (April, 1341); Manfredo (now Manfredo V) was in possession till March 27, 1344; then Tommaso till May 13, 1344; then Manfredo till September 6, 1346; then Tommaso till Aug. 15, 1357, when he died (Cappelli, *Cronologia*, p. 357), to be succeeded by his son, Federigo II. At some time after he had ceased to reign (probably in 1354, or soon after; *M. H. P.*, p. 991), Manfredo resorted to Milan, where he was made much of by Galeazzo, who appointed him a councilor. At his own instance, or by his own fault, he retired from Galeazzo's court, Azarius says in 1362 (*R. I. S.* 16. 405; cf. *M. H. P.*, p. 968). He did not die till after Aug. 5, 1389 (*M. H. P.*); and he must have been born, one would think, at least 70 years before, since his father contracted his first marriage in 1303, and he himself was probably of age when he contested his nephew's succession in 1340. If he were born (say) in 1318, he would have been 50 years old at Lionel's marriage. How he came to be councilor then, if Azarius is right, is difficult to see; either Azarius is mistaken in the year, as seems most probable, or else Galeazzo had taken him back. The chroniclers call him a handsome man, wise, prudent, and upright.

For Galeazzo's councilors in general, see *R. I. S.* 16. 403.

contained the relics of the Three Magi, besides the splendid Gothic monument to Peter Martyr,[62] erected some thirty years before.[63]

Entering at the Porta Ticinese, the guests of Galeazzo would next have seen, on the right, the most striking piece of Roman architecture in the city, a porch of sixteen Corinthian columns,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Plan of Milan near the Cathedral.
(From Giulini 7. 335.)

just behind which rose the oldest church of Milan, S. Lorenzo. Turning into the present Via Torino through the Porta Ticinese of the inner, or Roman wall, the procession would have passed near the church of S. Giorgio, with the adjoining palace belonging to Galeazzo (Corio, p. 438), the palace and baths named after Trajan and Maximian (near the present Palazzo Trivulzio), and the church of S. Satiro, finally reaching the Summer Metropolitan Basilica of Santa Tecla[64] (Pl. 2), facing the Via Torino in such a way as to require a detour just where the street now debouches into the Piazza del Duomo. Thence by Santa Maria Maggiore (Pl. 1) to the Archiepiscopal Palace (Pl. 39), where at least the chief guests were to be lodged.[65] Somewhat south of west lay S. Ambrogio, and, some distance south of that, S. Vincenzo in Prato.[66]

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[62] Figured in Venturi, pp. 547-561.

[63] Here every year, beginning with 1336, at the Feast of the Epiphany (Twelfth Night, Jan. 6), the following ceremony took place (Giulini 5.

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243): Three men, attired as kings, and followed by servants and apes, rode from the Carrobbio, where the Corso Porta Ticinese now joins the Via Torino, out to S. Eustorgio. On the way they were stopped by Herod and the scribes, who were seated near the Roman columns in front of S. Lorenzo, and asked whither they were going. Arrived at S. Eustorgio, they deposited their gifts on the high altar, which represented the manger at Bethlehem, and lay down to sleep. After a time, they woke with a start, as if by a divine impulse, and continued their journey through the Porta Romana (outside of which was a Roman triumphal arch).

[64] See p. 57, note 2.

[65] Corio; *Annal. Med.; Frag.;* Giulini 5. 511.

[66] Milan was as yet poor in sculpture and painting. Had the English visitors been in Florence, they might have admired Giotto's paintings in the Peruzzi and Bardi chapels of Santa Croce; the frescoes of the Spanish Chapel (see Ruskin's *Mornings in Florence*); the Orcagnas of the Strozzi chapel in Santa Maria Novella, and his richly carved tabernacle in Or San Michele; Taddeo Gaddi's work in the Baroncelli (Giugni) chapel of Santa Croce; besides Gaddi's Ponte Vecchio, and Giotto's Campanile. Had they been in Pisa, there were the frescoes of the Campo Santo; or in Padua, Giotto's frescoes in the Scrovegni chapel (we are reminded that Francesco da Carrara, the ruler of Padua, received six years later, as a bequest—dated April 4, 1370—from Petrarch, a Madonna by Giotto, whose beauty, according to the poet, whatever the ignorant might think of it, was sure to be admired by the masters of art: 'Quia . . . ego nihil habeo dignum se, dimitto tabulam meam sive iconam Beatæ Virginis Mariæ, operis Joctii pictoris egregii, . . . cujus pulchritudinem ignorantes non intelligunt, magistri autem artis stupent'). We shall hardly be far wrong in assuming that the art of the period was somewhat too austere to have suited the taste of the joyous guests. Magnificence was the note of the Visconti: the Castello at Pavia (cf. pp. 43, 80) had just been built, and the new Cathedral of Milan was to be begun in 1386. Painting and sculpture, however, were not to flourish in Milan during the rest of the century (cf. Giulini 5. 661).

V. LIONEL AND VIOLANTE

As the day for the wedding approached, the thoughts of every one would turn more and more to the chief actors in the scene, Lionel and Violante.

I. LIONEL

Lionel was too young to have played a very important part on the world's stage, being not yet 30 years old. For the chivalric imaginings which presided at his birth and christening, see Appendix A. It would have been a long forecast which could have seen that he should get kings, though he were none—that from him, through his first marriage, should lineally proceed a monarch who should revive and surpass, on the Field of the Cloth of Gold (1520), the splendors of Lionel's second marriage. He himself had been most conspicuous in the service of England during his five years' residence in Ireland as viceroy[1] (1361-6), an office the importance of which has been thus set forth by Camden[2]:

> Their jurisdiction and authority is really large and Royal: they make war and peace, have power to fill all Magistracies and other Offices, except some very few; to pardon all crimes but those of high treason, and to confer Knighthood, etc. . . . Whether we consider his jurisdiction and authority, or his train, attendance, and splendor, there is certainly no Viceroy in Christendom that comes nearer the grandeur and majesty of a King.

As for Lionel's appearance, Hardyng[3] tells us little except that he was tall:

In all the world was then no prince hym like
Of hie stature and of all semelynesse;
Above all men within his hole kyngrike
By the shulders he might be seen, doutlesse;
As a mayde in halle of gentilnesse,
And in all other places sonne to rethorike,
And in the felde a lyon Marmorike.[4]

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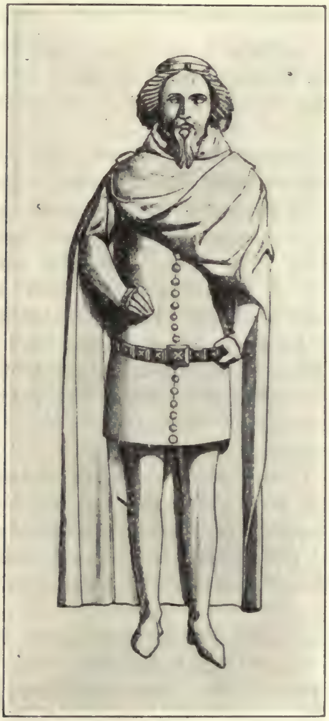
[1] See *Hist. Background,* pp. 179-181.

[2] *Britannia,* ed. Gibson, 1695, p. 974.

[3] *Chronicle,* ed. Ellis, p. 334.

[4] Belonging to Marmarica, the modern Barca, in northern Africa.

On the other hand, as Lionel's is among the effigies surrounding the tomb of Edward III in Westminster Abbey, which is one of the finest works of its kind belonging to the 14th century,[5] we may turn to that with some confidence to gain a notion of Lionel's face and form,[6] though presumably it is only the effigy of the king himself which can be absolutely depended upon for faithfulness.[7]



Effigy of Prince Lionel.
(From Gardiner, *History of England,* p. 264.)

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[5] *Encyc. Brit.,* 11th ed., 24. 494.

[6] It is figured in Carter, *Specimens of Ancient Painting and Engraving in England,* new edition, 1887, plate lxii (the third figure), and in Gardiner, *Student's History of England,* p. 264, from which it is here reproduced.

[7] However, the drooping mustaches of the Black Prince, in the effigy from his father's tomb (Gardiner, p. 264), agree with those on his own

2. VIOLANTE

As she was born in 1355, or at earliest near the very end of 1354,[8] Violante can hardly have been much more than 13 years old[9] on June 5, 1368. She is called beautiful by the chroniclers.[10] It must have been a blonde beauty, one would think, like that

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tomb at Canterbury (Gardiner, p. 256); but allowance must be made for the fashion of the time (*Encyc. Brit.*, 11th ed., 3. 576). See the picture of Edward III's tomb in Gardiner, p. 263; cf. Shakespeare, *Richard II* 3. 3. 105-6.

[8] Deduced from the statement of *Chron. Plac.* (*R. I. S.* 16. 546-7), where she is described as dying in November, 1386, and as not having 'ultra annos XXXII.' If she had been born at any time before November, 1354, she would have been over 32; her birth must consequently have been later than that date. The Milanese annalist says (*R. I. S.* 16. 778): 'anno ætatis suæ XXXII,' but mistakes the year, calling it 1383. That the latter is not correct is shown (1) by the carelessness of this document in other respects (e. g. 'in paucis *diebus* habuit tres viros'), (2) by the fact that *Chron. Plac.* is approximately right in saying that she died after her third husband had been in prison two years, or thereabouts (he was actually taken prisoner in May, 1385; cf. *R. I. S.* 16. 784-6, 853), since the time was actually a year and a half.

[9] 'Tenera dy etade' (*Cron. Saluz.*, p. 1013); 'tenera sua figliola' (*Cron. Monf.*, p. 1212). She was about the age of Lionel's own daughter Philippa, who was married to Edmund Mortimer just before Lionel left England for Italy (*Cont. Eul. Hist.* 3. 333; cf. *Dict. Nat. Biog.* 39. 119). Lionel's first wife, Elizabeth, was nine when he was contracted to her, and he three.

Violante is called Galeazzo's *only* daughter by the chronicles of Piacenza and Milan (*R. I. S.* 16. 510, 738), but there had been a younger one, Maria, born in 1357, and dying in May, 1362 (*M. H. P.*, p. 1336; Corio, p. 462).

Boccaccio, too, had had a daughter Violante, for whom see p. 81. The name occurs in the *Decameron* (5. 7).

There had been earlier Violantes, especially in the houses of Montferrat and Saluzzo; so, for example, one who married, toward the close of the 13th century, Andronicus Palæologus, Emperor of Constantinople, and thus became the great-grandmother of Secondotto (*M. H. P.*, pp. 932, 1325; cf. below, pp. 108-9); and another, the second daughter of Manfredo IV of Saluzzo (d. 1340) by his second wife, who in 1327 married Luchino Visconti (*M. H. P.*, p. 969).

The name, owing to confusion, is sometimes written Yolande, or Yolante.

[10] *Chron. Plac.* (*R. I. S.* 16. 510) and *Annal. Med.* (*R. I. S.* 16. 738), in an identical passage, say 'juvenem et formosam.'

of other members of her family[11]—beauty naturally suggested by the name 'English,' which was attaching itself to the Visconti.[12] Her character at this time can only be inferred from the impression it produced in her maturity. When we consider that most women would have found her sorrows and trials unendurable,[13] it is no slight thing to have deserved the praise of the Milanese annalist, that she was kind, intelligent, devout, and chaste.[14]

VI. THE WEDDING

After an interview of nine days, the wedding took place on Monday, June 5.[1] The wedding-ceremony itself was performed—probably on a staging or balcony specially erected—over the portal, or central doorway, of the Cathedral of Milan, or rather of what was called the Winter Metropolitan Basilica.[2]

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[11] Cf. pp. 48, 50. Of Azzo (d. 1339) we are told (Giulini 5. 273) that he was of a rubicund complexion, and that his hair was so fair as to be almost white, but that it shone like gold.

[12] See p. 26.

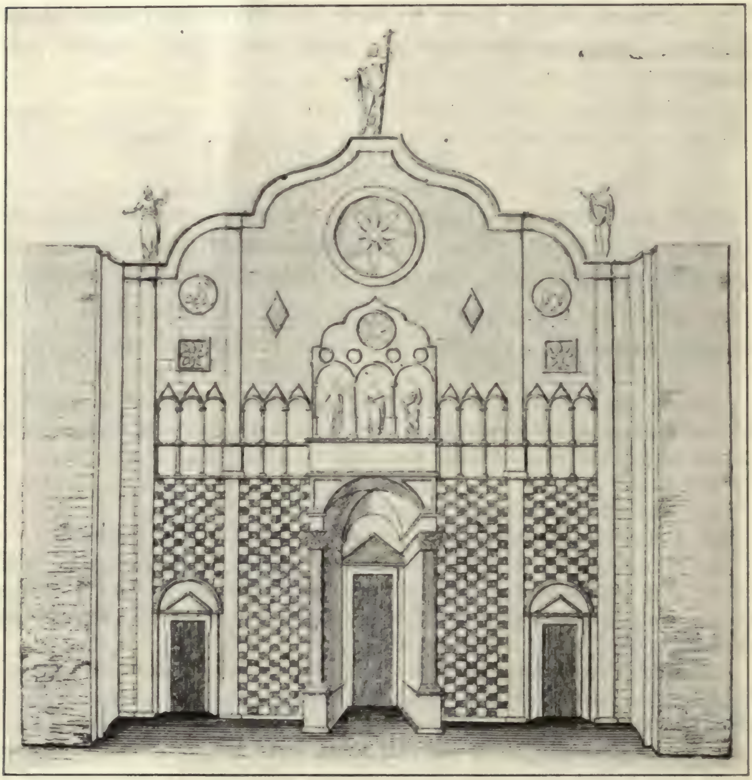
[13] For her subsequent history, see pp. 107 ff.

[14] So I translate 'bona, sapiens, pia, et honesta' (*R. I. S.* 16. 546).

[1] So *Annal. Med., Frag., Cron. Monf.* Corio says June 15, being wrong here, as concerning the date of Lionel's arrival at Milan. Kittredge (*Eng. Stud.* 26. 326, note 8) says May 28; Barnes, May 29, 1367; Holinshed (2. 686), June 15, 1367 or 1368.

[2] Directly across the square from its façade was the small Summer Metropolitan Basilica of Sta. Tecla (No. 4 on plan). The Winter Basilica, or Santa Maria Maggiore, was so much smaller than the present Cathedral that a great part of it was for many years included, with room on every side, within the walls of the present building. It was restored in 1170, the ladies of Milan having devoted their jewels to this purpose. In 1353 it was damaged by the fall of its high campanile, which destroyed several houses. It was at once restored by the archbishop, but could still be described, when it was a question of the erection of the present Cathedral, as ruined and dilapidated (*consumptam et dirupatam*). The basilica was much shut in by other buildings, but had an enclosed space, or court, in front (Boito, *Il Duomo di Milano*, p. 11). A good deal of red marble (a speckled sort, brought from near Verona) was used in the old basilica (cf. Boito, pp. 186, 209), and there still remain eight statues of apostles on the wall of the north aisle of the Cathedral, on which Lionel and Violante may have looked (four of them figured in Boito, Pl. 38; cf. pp. 53-4). A description of the old façade, so far as we are informed

This occupied a part of the site of the present Cathedral—which was not begun till 1386—and faced the same way as the latter. A great number of knights, clergy, and other notables were in



Façade of Santa Maria Maggiore, Milan.
(From Rosmini 2. 212.)

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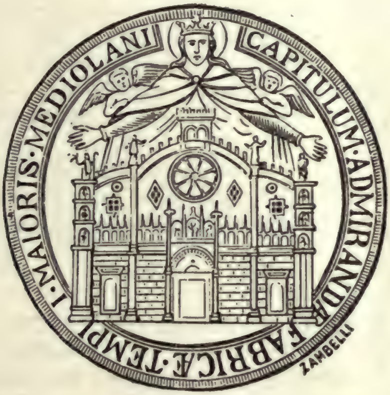
about it, is given by Boito (p. 134), and other particulars concerning the basilica are scattered throughout his book (see the index on p. 315). New doors for it had recently been constructed by order of Galeazzo, from the proceeds of a tax laid upon the merchants of Milan. They were of marble, lined (*intus*) with beautiful reliefs (*intaliis*), and were very costly (*R. I. S.* 16. 403-4). Some notion of the façade may be gained from the illustrations below, the first, and perhaps the more trustworthy, attendance.[3] According to custom, the bride was supported by two of her kin, who gave her away, as it were, and one of whom held her finger for the placing of the ring. The two kinsmen were in this case the uncles of the bride, Bernabò Visconti[4] and Amedeo of Savoy,[5] the former of whom is described as holding her finger.[6] As the Bishop of Novara,[7] Oldrado,[8] celebrated high mass in the basilica with great solemnity,[9] and accompanied by numerous clergy,[10] it is probable that it was he who performed the ceremony of uniting the couple.



Façade of Santa Maria Maggiore, Milan.

(From Boito, *Il Duomo di Milano*, title-page.)

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being from Rosmini (2. 212), and the second from Boito (as above, title-page).

[3] Corio; *Annal. Med.; Frag.*

[4] Who had unexpectedly come from Guastalla, with a picked body of nobles (Corio, p. 469); cf. pp. 47-8.

[5] *Annal. Med.*

[6] Corio; *Annal. Med.* Perhaps we may understand that both did. Corio mentions only Bernabò; *Annal. Med.* mentions Bernabò, 'qui tenuit digitum sponsæ una cum Comite Sabaudiæ avunculo suo, videlicet ambo a lateribus sponsæ.'

[7] Corio; *Annal. Med.; Frag.*

[8] So Giulini 5. 511.

[9] Corio. *Annal. Med.:* 'in pontificalibus.'

[10] *Frag.*

VII. THE BANQUET

On the day[1] of the wedding a magnificent banquet[2] was served. What may be called the classic account of this was written by Paulus Jovius (1483-1552) long after the event, though no doubt reposing on good contemporary authorities. His description is as follows:

> Leonati porro adventu tantæ opes admirabili liberalitate profusæ sunt, cum et nuptiale epulum daret, et equestres ederet ludos, et Britannos ex generis comitatu supra ducentos eximiis donis adornaret, ut opulentissimorum Regum splendorem superasse censeretur. In convivio enim, in quo Franciscus Petrarcha inter principes convivas discubuit, singulos ferculorum missus, qui supra triginta fuere, totidem inusitatæ magnificentiæ, munera sequebantur: ea omnia Joannes Galeacius, delectæ juventutis Princeps, ad mensam perducens Leonato obtulit.
>
> Fuere in uno tantum missu septuaginta[3] equi insignes argenteis et sericis ephippiis strati[4]: in aliis vero vasa argentea,[5] hierofalcones,[6] venatici canes,[7] equestria arma,[8] nobiles loricæ, solidoque ferro splen-

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[1] Corio; *Annal. Med.; Frag.* Gabotto (*Misc. di Stor. Ital.* 33. 169) says the banquet took place on the *evening* of the wedding-day ('quella sera vi fu un convito'). Giulini (5. 512) represents the company as proceeding directly from the basilica to the banquet.

Cron. Monf.'s 'la *dominicha* nella disponsatione' must be a mistake, one would think. The wedding took place on June 5, which was a Monday. The previous day was Trinity Sunday, and of course the next Sunday was June 11. Presumably the wedding-feast would not be held before the wedding, and an interval of six days would have been too great.

[2] Corio: 'un splendidissimo convito'; *Annal. Med.:* 'in prandio fecit maximum convivium'; *Frag.:* 'uno grande desinare.' Cf. that when Gian Galeazzo was made duke in 1395 (Corio, p. 539), and see the eulogy of this one in *Cron. Monf.* (p. 1225).

[3] Cf. p. 73.

[4] Cf. pp. 68, 71, 72.

[5] Cf. p. 69.

[6] Cf. pp. 66, 67.

[7] Cf. pp. 66, 67.

[8] Cf. pp. 68, 71, 72.

[9] In 1360, the Green Count sent as a present for the wedding of Gian Galeazzo and Isabella of France five suits of armor which he had had made specially, and which cost 145 florins (Cordey, *Les Contes de Savoie,* p. 157). The original account runs (*ib.*): 'Item a Jacob Lo Platier pour v payres de plats par mon seigneur [Gian Galeazzo?] et par monseigneur

> didi thoraces,[9] galeæque[10] item et cassides præaltis conis exornatæ, indumenta margaritis picta,[11] balthei militares[12]; postremo præstantes aliquot gemmæ[13] aureis emblematibus insertæ, et aureæ[14] purpureæque telæ ad viriles vestes vis ingens.[15] Is porro convivii apparatus fuit, ut relatæ a mensa dapes, decem millibus hominum abunde sufficerent.

The whole passage is thus rendered by Barnes,[16] who, it will be seen, is indebted in part to Stow:

Galeache et mosse Barnabo, VII^{xx}V flor.' According to this, a suit of this armor would have cost not less than $400 (cf. p. 29). Henry, Earl of Derby, the future Henry IV, in preparation for his combat in the lists with the Duke of Norfolk (Sept. 16, 1398), sent to Gian Galeazzo for special armor (cf. Shakespeare, *Richard II* 1. 3. 28, 'Thus plated in habiliments of war'; 1. 3. 73, 'Add proof unto mine armor with thy prayers'). Froissart's account of this is as follows (Kervyn 16. 95-6; cf. *Archæologia* 20. 102; *Dict. Nat. Biog.* 26. 34; 39. 234; Adam of Usk, p. 23): 'Et envoia le conte d'Erby grans messages en Lombardie devers messire Galléas, duc de Milan, pour avoir des armures à son point et à sa voulenté. Le dit duc descendy moult lyement à la prière du conte d'Erby, et mist à chois ung chevallier, qui se nommoit messire Franchois, que le conte d'Erby avoit là envoié, de toutes ses armures pour servir le dit conte. Avecques tout ce, quant le chevallier dessus nommé eut advisé et choisy entre toutes les armures tant de plates comme de mailles du seigneur Galéas de Milan, le dit seigneur de Milan, d'abondance et pour faire plaisir et amour au conte d'Erby, ordonna à quatre des meilleurs armoieurs qui fuissent en Lombardie, à aller jusques en Angleterre avec le dit chevallier pour entendre à armer à son point le conte d'Erby.' The Milanese armor of this period, it will be seen, included mail as well as plate.

[10] Cf. pp. 68, 71.

[11] Cf. p. 72.

[12] Cf. pp. 72, 73, 74.

[13] Cf. p. 72.

[14] Cf. pp. 69, 73.

[15] In the romance (stanzas 71, 72) of *The Sege of Melayne* (1350-1400) we are told of a gift which included 60 steeds, ridden by as many knights, each bearing a falcon and a cup of gold, and with a greyhound and a rache for each. Cf. also the description in Boccaccio, *Teseide* 6. 8, 9:

> A chi prender volea davano assai:
> Cani, falconi e astor di gran prodezza
> Usavano a diletto. . . . .
> Vestivan robe per molto oro care,
> Con gran destrier, cavalli e palafreni,
> E nulla si lasciavano a donare,
> Sì eran d'ogni gran larghezza pieni.

[16] P. 719.

> Duke Galeas in Honour of this his Son-in-Law is said to have spent such abundance of Treasure, as seem'd to surpass the Magnificence of the most Wealthy Monarchs. For not to mention all the Sumptuous Feasts, Balls, Justs, and Tourneaments, and other stately and divertive Spectacles, set forth on this occasion; nor to summ up the great and large Gifts, which were given to the Lord Edward Spencer, and more than 200 other English Gentlemen, who came out of England to wait on the Prince; the Marriage Feast alone was so extraordinary, that We may by that Conjecture the Largeness of Duke Galeas his Soul, the full satisfaction he had in this Match, and the Abundance of his Coffers. For in that One Feast, where Francis Petrarch, the Laureate Poet of Italy, was present, being for Honour of his Learning seated among the Guests of the Highest Quality, there were above 30 Courses of service upon the Table, and between every Course, as many Presents of unusual Magnificence, intermixed; all which John Galeas, the Duke's Son, and Prince of the Chosen Youth, that waited that day, presented unto Prince Lionel, as they were brought up to the Table.
>
> In one Course were presented Seventy Good Horses, richly Adorned and Caparizon'd with Silk and Embroider'd Furniture; and in the other Courses, came up Vessels of Silver, Ger-Falcons, Hounds, Armour for Horses, Costly Coats of Mail, shining Breastplates of Massy Steel, Corslets, Helmets, and Burganets adorned with High and Rich Crests and Plumes; Surcoats embroider'd with costly Jewels, Knights Girdles, and lastly, Pictures of Gold, beset with Gems, and Purple and Cloth of Gold for Mens Apparel in Great Abundance. And such vast Provision was there at this Feast, that the Meats, which were brought from the Table, would have plentifully sufficed 10000 Men.

The second paragraph was thus translated by Stow, *Annales,* 1592, p. 416[17]:

> There were in one onely course seventy goodly horses, adorned with silke and silver furniture: and in the other silver vessels, falcons, houndes, armour for horses, costly coates of mayle, breastplates glistering of massive steele, helmets, and corselets [*sic*] decked with costly crestes, apparell distinct, with costly jewelles, souldiors girdles, and lastly certaine gemmes, by curious art set in golde, and of purple, and cloth of golde for mens apparell in great abundance. And such was the sumptuousnesse of that banquet, that the meates which were brought from the table, woulde sufficiently have served 10000. men.

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[17] Sandford is indebted to both Stow and Barnes; thus, for example, 'glistering of Massie Steel.' Jovius' account is also the basis for the description by G. P. R. James, *History of Edward the Black Prince,* 2d ed., 2. 311. Cf. *Hist. Background,* p. 186.

The feast was held in the courtyard which occupied the centre of the public square adjoining the basilica. This square was known as the Piazza dell' Arengo,[18] Place of Harangue, or Forum, where in ancient times the people of the city assembled to listen to their leaders, and deliberate on public questions. The palace situated on this square (Pl. 40; see p. 52) had been burned down during the rule of Matteo Visconti I, and rebuilt by him (1295), with the addition of a tower.[19] It was in the court of this edifice[20] that the banquet was served,[21] perhaps in the marble loggia built by Matteo I in 1316 (*R. I. S.* 16. 698),

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[18] Also called Broletto Vecchio (Giulini 7. 336). The Broletto, or Palazzo Arengario, at Monza, still exists.

[19] Giulini 4. 467, 772.

[20] The present royal palace occupies nearly the same spot. The church or chapel of S. Gottardo belonged to the old palace; its apse and beautiful campanile (pictured in Giulini 5. 216), the latter dating from 1336, are still to be seen in the Via del Palazzo Reale. The monument to Azzo Visconti (1328-39), by the sculptor of the monument to Peter Martyr (see p. 52), Balduccio of Pisa, which was formerly in S. Gottardo, is to be seen in the Palazzo Trivulzio (it is figured in Giulini, opp. 5. 274).

[21] Giulini 5. 512. Corio has 'nella sua corte, sopra la piazza dell' Arenga'; *Annal. Med.:* 'in Curia magna Arengi'; *Frag.:* 'nella Corte, sive nello Stallo suo grande per mezzo l'Aringo, sive Piazza del Duomo.' *Corte* would here naturally be interpreted as 'courtyard,' but it seems sometimes to have been employed for 'palace.' I assume that it here means the courtyard of the palace, rather than the interior of the building itself. However, Aliprando, who wrote his *Chronicle of Mantua* nearly fifty years after this event, and who must therefore be used with caution (for example, he dates the wedding in May, 1366), speaks of the hundred principal guests as banqueting in one hall (*sala*), while the rest were accommodated in other halls, since there was not room in a single one for all. Aliprando adds certain particulars, which are at least well invented, though we have no confirmation of them save such as may be gathered from the customs of the time. At the beginning of the feast, there was a blast of trumpets which made conversation impossible. Then the sewers, Galeazzo (wrongly Jovius, p. 60, above) on horseback at their head (this hardly suggests indoors), first bring wine and confections, and then proceed to the kitchen to serve in the courses. Violante was first served by a sewer of noble blood on horseback:

Quello barone
Che lo taglier de la sposa portava
A caval gìa.

Aliprando often varies from the other chroniclers with regard to while the spectators may have been accommodated as groundlings below. Two tables were spread, one for the men, and one for the women, there being fifty-seven guests in all.[22]

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details of ornament, but of these I make no account, nor of such praise as

Più belli cani non fu mai veduto.

Sismondi, Fr. (7. 21, note 2), has no warrant in the chroniclers (except Aliprando) for saying: 'La cour était distribuée à plusieurs tables, selon le rang des personnages.'

[22] So *Cron. Monf.* The other three chroniclers seem to be confused. Corio mentions as being at the first table Lionel, Amedeo, and Despenser, with many other barons, besides the Bishop of Novara, Matteo and Lodovico (see pp. 109 ff.), sons of Bernabò, Petrarch, and *other* Pisan citizens; *Annal. Med.:* Lionel, Amedeo, the Bishop of Novara and another Bishop, Marco (not Matteo; Marco was Petrarch's godson, and the latter wrote a Latin poem on his baptism) and Lodovico, Petrarch, with many other knights and nobles of Pisa and other cities; *Frag.:* Lionel, Amedeo, Despenser, and many other barons, [ ] and Lodovico, Petrarch, and certain other knights and gentlemen of Pisa and other cities. The name of the other son of Bernabò seems to be accidentally omitted in *Frag.*

At the second table were seated Bernabò's wife, a Scaliger of Verona, by compliment called Regina, with many other ladies (Corio: 'honorable matrons'). At this point the difficulty begins. Corio says: 'honorande matrone per taglieri cinquanta'; *Annal. Med.:* 'cum multis dominabus, quæ deferebant per quinquaginta incisoria infrascripta cibaria'; *Frag.:* 'con altre donne per taglieri cinquanta.' Giulini (5. 512) renders: 'con molte delle principali dame, le quali portavano in tavola i piatti alla prima mensa, cioè per ciascuna portata cinquanta piatti, detti dall' annalista *incisoria,* e dal Corio *taglieri,* perchè vi si tagliavano sopra le vivande.' This I interpret to mean: There were fifty guests at each table, and each course was presented to the men of the first table by the ladies of the second, a lady to each dish (*literally,* trencher). This seems to me unlikely, for the following reasons: (1) Each course was double, consisting of fish and flesh, and there were eighteen courses, so that the task would have been none of the lightest; (2) one can hardly think of Regina della Scala being thus occupied for a good part of a summer's day; (3) there would have been little opportunity for the ladies to partake of the banquet; (4) the Milanese annalist expressly says that Despenser served the first table, assisted by many other magnates; (5) the *Fragment* says that fish and flesh were served for the Duke's table, and for the table where was seated Madonna Regina.

There remains the question of the total number of guests. Were there (1) fifty-seven guests in all, as *Cron. Monf.* says, or (2) fifty guests at each table, or (3) fifty-seven at the first, and fifty at the second? I incline to (2). It is not likely that space was lacking, since at the nuptial feast following the return of Galeazzo I and Beatrice d'Este from Modena, where they had been married on June 24, 1300 (the journey from Milan

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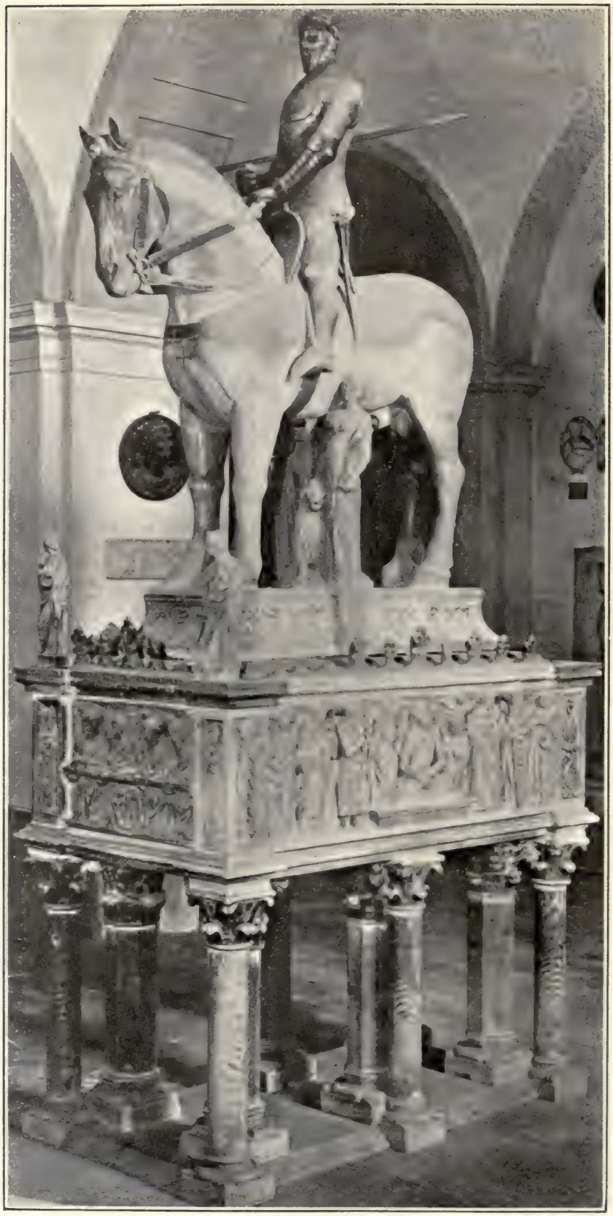

Tomb of Bernabò Visconti (ca. 1370).
(From a photograph in possession of the Museum of Fine Arts, Boston.)

The details of the banquet are described by Corio, the *Annals of Milan,* the *Chronicle of Montferrat,* and the *Fragment* (besides Aliprando; see p. 63, note 21). These four accounts are in substantial agreement, but vary in particulars. Where they differ, I have endeavored to harmonize them as best I could, and have generally effected a condensation. Here and there I have been unable to translate a word, and in other cases have not been quite certain of the rendering. It will be observed that presents were offered to the guests with each course.

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to Modena, June 15-21; from Modena to Milan, June 26-July 3), a thousand persons sat down (Giulini 4. 801). At this earlier feast, open house was kept at the Broletto for eight days; great numbers of actors, jugglers, and buffoons were present; and every one of the thousand guests at the banquet received a suit of raiment (Giulini 4. 801). Moreover, in the year 1277, the greater part of the population of Milan stood in arms at one time within the enclosure (Giulini 4. 636); in 1355 there were 16,000 armed men in Milan (Mézières, p. 279), but the population may well have increased in the interval between 1277 and that year. There would therefore have been room for many spectators at the wedding-banquet of Lionel and Violante.

Regina (b. ca. 1336 or 1337), whom we have mentioned above, seems to have gained this name on account of her regal bearing (Leo 3. 296, note 2; 325, note 1), her Christian name being properly Beatrice (but Giulini, 5. 645-6, says Caterina, and is supported by *R. I. S.* 15. 503). She was the daughter of Mastino II of Verona (d. 1351), whose equestrian statue under a canopy, near the Piazza dei Signori, attracts the eye of every traveler at Verona. She was married to Bernabò in September, 1350, at a tender age (*M. H. P.*, p. 1180), and died June 18, 1384, after having borne him 15 children (Corio, p. 509), her last son, Mastino, having apparently been born in 1375 (*R. I. S.* 17. 499; Muratori 8. 415; otherwise Giulini 5. 651). Her epitaph in verse may be read in Corio (p. 504) and *Annal. Med.* (*R. I. S.* 16. 778), where she is called Regina Beatrix. Her tomb is still to be seen in the Archæological Museum of the Castle of Milan, while in the adjoining room is that of her husband, Bernabò, originally erected (1370), 15 years before his death, in S. Giovanni in Conca (Pl. 52), whence it was removed (1814) to the church of Brera (Rosmini 2. 157, note 2). The latter tomb has a life-size marble equestrian statue of Bernabò (see *R. I. S.* 16. 544-5, 800, 854; Corio, p. 509), accompanied by Fortitude and Justice (see the picture opposite); it is to be compared rather with the nearly contemporary one of Can Signorio (cf. Venturi, p. 590) at Verona than with the bronze statues of Gattamelata (1447) at Padua, and Colleoni (1481) at Venice. Regina built (1381), perhaps with 400,000 golden florins received from the della Scalas in 1379, the church (*R. I. S.* 16. 777) of Santa Maria della Scala (sup-

1. The first course was served double for the duke's table—meat and fish. There were sucking pigs, gilded, with fire in their mouths; the fish were porcelain-crabs [or perhaps sea-snails], also gilded. — The gifts were two greyhounds,[23] with velvet[24] collars[25] and silken leashes.[26] Also twelve brace of *sausi,*[27] six brace to a leash, their chains being of gilded brass, their collars[25] of leather, and their leashes of silk.[28]

2. The second meat-course was of hares, gilded. The fish-course was of pike, gilded. — The gifts were twelve brace of greyhounds, with silken collars, buckles[29] of gilded brass, and six silken[30] leashes; besides six goshawks,[31] with as many

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pressed in 1776), on the site of which stands the theatre of that name (Rosmini 2. 147, note 1; Leo 3. 325, note 1).

[23] See No. 2. But here, where the other chroniclers have 'levr(i)eri,' 'livr(i)eri,' Aliprando has 'liopardi.' This, after all, is probably the right reading, since (1) there are only two of these, whereas at the second course there are 24; (2) we are told of Gian Galeazzo that though he, like his uncle Bernabò, quartered large numbers of dogs upon his subjects for his use in hunting, he preferred the leopard (cheetah) for this purpose (Religieux de Saint-Denys, ed. Bellaguet, 3. 132; cf. De Noirmont 3. 332-8; *Hist. Background,* p. 174; *Encyc. Brit.,* 11th ed., 5. 368; 6. 22).

[24] De Noirmont (2. 300) tells of a Frenchman who received from an Englishman (in 1550) six greyhounds, with velvet collars embroidered with gold.

[25] See Nos. 2, 3, 4.

[26] See Nos. 2, 3, 4.

[27] *Frag.:* sauxi. This seems equivalent to the M.H.G. *sûse,* defined by Lexer (*MHD. Handwörterbuch*) as 'eine Art Jagdhund'; Florio: 'a Hound, a Spaniell.'

[28] Cf. De Noirmont 2. 298: 'Dans les comptes de dépenses du roi Jean, Pierre des Livres, orfévre, reçoit 19 écus pour 4 marcs, 6 onces, 10 *estellins* d'argent, "à faire la garnison de deux grands colliers garnis de grandes pièces d'argent dorées et faites d'orbevoyes et d'esmaux sartiz à cerfs enlevés à manteaux esmaillés des armes dudit seigneur pour deux grans chiens alans." Les alans de Louis XI avaient aussi des colliers de cuir de Lombardie garnis de clous dorés de fin or et soudés d'argent.'

[29] Spranghe. I have not been able to distinguish in all cases between 'buckle' and 'clasp.' See Nos. 3, 6, 7, 11, 12.

[30] The romance of *Partonope* (ca. 1450) has (Univ. Coll. 2235-8):

> Coupled with sylk and not wyth heere,
> Lemours aboute her nekkes bere
> Her lees were as softe as sylk,
> And therto whyte as ony mylk.

[31] Astori. See Nos. 4, 5.

creances,[32] and silver buttons enameled with the devices of Galeazzo and the duke, besides buttons.[33]

3. The third meat-course was a large calf, gilded. The fish-course was of trout, gilded. — The gifts were six alaunts,[34] and six large *striv*(*i*)*eri*,[35] with velvet collars, buckles[36] and rings (links ?)[37] of gilded brass, and six silken[38] leashes.

4. The fourth meat-course was of quails and partridges, gilded. The fish-course was of roasted trout,[39] gilded. — The gifts were twelve sparrow-hawks,[40] with bells[41] of gilded brass, creances and branching cords[42] of silk, and buttons of gilded silver, enameled with the arms[43] of Galeazzo and Duke Lionel; besides twelve brace of setters,[44] with gilded[45] collars, twelve chains of gilded brass, and six leashes of silk.

5. The fifth meat-course was of ducks and herons,[46] gilded. The fish-course was of carp, gilded. — The gifts were six[47] peregrine falcons, with hoods of velvet, having pearls on top, and buttons and rings (links ?)[48] of silver, wrought with the

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[32] See Nos. 4, 5. Another name is *loigne* (*loyn, lune, lewin*). The Italian is (plur.) longole(-i), longare, longhe.

[33] *Cron. Monf.:* of pearl.

[34] *Annal. Med., Cron. Monf.,* Alip.: cani alani; Corio, *Frag.:* cani. Florio defines as 'a mastive dog.' See Appendix B, pp. 128 ff.

[35] Florio defines as 'a blood- or lime-hound, a setting dog'; Palsgrave, as 'great hounde.'

[36] Fib(b)ie.

[37] Maglie (macchie). See No. 5.

[38] Alip.: of black silk.

[39] *Cron. Monf.:* temeri; Alip.: temoli (graylings).

[40] See the mention in Magenta 2. 88. On other occasions, Galeazzo and Bernabò made gifts of sparrow-hawks and dogs. Cf. Gabotto, in *Rendiconti della R. Accademia dei Lincei,* Ser. 5, Vol. 8, p. 81.

[41] 'Somtyme Bellis of Melen were calde the best, and thay be full goode for thay comunely be sownden with silver and solde ther after' (Berners).

[42] Branchette (breghette, braghette).

[43] See Nos. 5, 6, 7, 8, 12.

[44] Bracchi.

[45] De Noirmont (1. 113), referring to the Count de la Borde's *Les Ducs de Bourgogne,* Preuves, tells of 'colliers de chiens garnis d'argent doré et d'émail, que gants à *faulconner* de velours vermeil, brodés de perles, sonnettes et vervelles dorées et émaillés, chaperons d'oiseaux, jets et longes ornés de semence de perles.'

[46] But Alip.: cisoni (see p. 72, note 93). Cf. *Hist. Background,* p. 185.

[47] Alip.: twelve.

[48] *Cron. Monf.:* enameled.

arms of Galeazzo and the Duke of Clarence; and with silken creances, having buttons of pearls at the top.

6. The sixth meat-course was of beef, and of fat capons with sauce of garlic and vinegar. The fish-course was of sturgeons in water.[49] — The gifts were twelve steel corslets[50] without collars, of which two, for the duke in person, had the buckles[51] and bosses[52] of gilded silver, wrought with the arms of the lords aforesaid, while the others were of gilded brass.

7. The seventh meat-course was of capons and meat[53] in lemon-sauce. The fish-course was of tench[54] in lemon-sauce. — The gifts were twelve tilting-panoplies, including saddles,[55] lances, *saiti*,[56] and helmets.[57] Two of the panoplies and saddles, for the duke in person, were adorned with enameled silver, wrought with the arms of the duke,[58] the buckles,[59] bosses, clasps,[60] and hooks[61] being gilded. The others had ornaments of gilded brass.

8. The eighth meat-course was beef-pies,[62] served with cheese. The fish-course was of large eels in pies.[63] — The gifts were twelve war-panoplies[64]; two, for the duke, being ornamented with his arms in silver gilt, while the others had trimmings[65] of gilded brass.

9. The ninth meat-course was of meat-aspic.[66] The fish-course

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[49] But *Cron. Monf.:* alesati. Cf. *Hist. Background,* p. 185.

[50] Panzeroni, panzere. Florio defines *pancierone* as 'a bellie-piece of armour.' See p. 62.

[51] Fibbie.

[52] Mazzi, maz(i)i.

[53] Alip.: veal.

[54] Tenconi; pesce.

[55] See Nos. 11, 12.

[56] Saette, 'darts'(?).

[57] See Nos. 11, 12.

[58] *Cron. Monf.:* of the lords named; *Frag.:* of the aforesaid lord and duke.

[59] Fib(b)ie; schive, schibbe. See Nos. 7, 11, 12.

[60] Spranghe.

[61] Ronchette; rocchetti; domenini.

[62] Alip.: the dough kneaded up with cheese and sugar.

[63] Alip.: sugared, and with good spices!

[64] See No. 7.

[65] See Nos. 11, 12.

[66] Alip. adds: and chicken-aspic.

was of fish-aspic. — The gifts were twelve[67] pieces of cloth of gold, and as many of silk.[68]

10. The tenth meat-course was of meat-galantine. The fish-course was galantine of lampreys. — The gifts were two large bottles of gilded and enameled silver, one filled with the choicest vernaccia,[69] and the other with the choicest malmsey; besides six bowls[70] of gilded and enameled silver, with goblets to match.

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[67] *Frag., Cron. Monf.:* ten.

[68] Alip.: colored silk, except one of white.

[69] If Chaucer learned of the details of this feast, it is not surprising that, when his liberal and luxurious young monk of Paris comes to St. Denis to visit his 'cousin,' the merchant, he should bring with him as a present precisely these two wines (*Shipman's Tale* 70-71):

> With him broghte he a jubbe of Malvesie,
> And eek another, ful of fyn Vernage.

Malvoisie, or malmsey, was a Greek wine, brought from Monemvasia, or (Napoli di) Malvasia, on the east coast of the Morea, the wine itself being produced not there, but in Crete, which was one of the chief sources of supply (Heyd, *Gesch. des Levantehandels* 1. 309; Pashley, *Travels in Crete* 2. 54-56), and in the Cyclades. Vernaccia, or vernage, on the other hand, was an Italian wine, white, strong, and sweet, originally, and perhaps typically, coming from the Genoese Levant, especially from the Cinque Terre of the sheltered Riviera near Spezia, a territory which includes the towns of Vernazza and Corniglia. The vernaccia of Corniglia is mentioned by both Boccaccio (*Dec.* 10. 2) and his contemporary, Franco Sacchetti, who speaks of having it brought from Portovenere, a little further down the coast. This southern part of the Riviera di Levante is thus described by Petrarch (*Africa* 6. 842-4, 848-853):

> Sensim turgescere colles
> Cedriferi, nullique cedens his saltibus ora
> Incipiunt, raræque virent per littora palmæ. . . . .
> Parte alia sinuosa patent convexa Siestri;
> Hinc solis vineta oculo lustrata benigno,
> Et Baccho dilecta nimis, Montemque Rubentem,
> Et juga prospectant Cornelia palmite late
> Inclyta mellifluo, quibus haud collesque Falernos
> Laudatamque licet Meroen cessisse pudebit.

(Now gradually rise the cedared hills along the shore, and here and there grows a palm tree. Near the curved beach of Sestri, vineyards flourish in the sun—Monterosso, and the heights of Corniglia—famous for honey-sweet wine, excelling even those from the Falernian hills and much-praised Meroe.) Monterosso, two miles from Vernazza, and four from Corniglia, produced a wine which we find mentioned as Montrose in the *Manière de Langage* of 1396 (*Revue Critique* of 1870, Paris, 1873), p.

11. The eleventh meat-course was of roasted kids. The fish-

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392 (cf. *Squyr of Lowe Degre* 756): 'Item de vins doucetes, comme de vin de Grece, Ipocras, *Montrose,* Rumney [Roumania], Vernage, Malvoisin, Osey [Alsace], clarrey et pyement.' The vines of the Cinque Terre grow in some cases against perpendicular rocks, and must be reached by means of ladders or ropes (Bædeker, *Oberitalien,* 18th ed., p. 512).

Fra Salimbene, writing late in the 13th century, speaks of Chiavari, 26 miles from Corniglia in the direction of Genoa, as being not far from the place where an abundance of vernaccia was produced—a wine so good that to it might well be applied the lines of a certain goliard (*Mon. Germ. Hist. Script.* 32. 572, cf. 642), thus translated by Coulton (*From St. Francis to Dante,* p. 209):

> O precious juice of the vine, what gift hath life like thine?
> If two sorts come to the feast, then fill me a cup of the best!
> Small is the profit to me if I suck down less than three;
> Sweet is the fourth full bowl, and deep is the calm of my soul;
> But the fifth cup sets me adaze, and my memory all in a maze;
> With the sixth I desire no more, but sprawl full length on the floor.

According to Gower (*Conf. Am.* 6. 218-9), vernage and piment were the standard of sweetness in wines. According to an account alluded to by Dante (*Purg.* 24. 24), Pope Martin IV died of eating too many eels, either drowned or cooked in vernaccia. Benvenuto Rambaldi, a commentator on the passage, informs us: 'La vernaccia è un ottimo vino, che viene dai monti di Genova'; similarly Buti: 'Vernaccia è vino che nasce ne la riviera di Genova, millior vino che si trova.' Chaucer refers to it as an aphrodisiac (*Merchant's Tale* 563-4; the scene is in Pavia):

> He drinketh ipocras, clarree, and vernage,
> Of spyces hote, t' encresen his corage.

What wine could better suit our monk as a present to his friend's beauteous and revelous wife? It was sweet, and it was strong.

As the best of wines (see Buti, above), it must have been, one would think, costly; yet the monk is represented as bringing a jubbe of it, and a jubbe of malmsey, when the *New Eng. Dict.* defines a jubbe as 'a large vessel for liquor.' This must certainly be true of those that held four gallons (according to the quotation in the *New Eng. Dict.*); but was this the only sort, the only size? Levins, in 1570, defines it as *cantharus, scyphus,* and the Middle English *Destruction of Troy* (11,940) speaks of 'jobbes of gold,' in conjunction with gems and jewels. Even the jubbe of the *Miller's Tale* (441-3) held only ale enough for a day, presumably for one person; here Hertzberg translates 'jubbe' by 'Krug,' and in the *Shipman's Tale* by 'Fläschchen.' It is easy to see, then, that the 'bottazzi (botacii),' 'fiaschi,' of the chroniclers, gilded and enameled though they were, may very well be represented by Chaucer's jubbes, and that it would not be strange if Chaucer remembered them when he was sketching the portrait of the free-living and free-handed monk.

[70] Alip.: e sei bronzini.

course was of roasted garfish.[71] — The gifts were six beautiful little coursers,[72] with gilded saddles and trimmings, six lances,[73] six beautiful shields,[74] painted and gilded, six hats[75] of polished steel—two with bosses and clasps[76] of silver gilt and enameled, for the duke himself, and the rest with clasps of gilded brass.

12. The twelfth meat-course was of hares and kids in chive-sauce[77] or pickle.[78] The fish-course was of various fish in chive-sauce. — The gifts were six great coursers, with gilded saddles and trimmings, wrought with the arms of Galeazzo and the duke—two with clasps and bosses of silver gilt for the duke, and the rest of gilded brass; besides six lances, six shields, and six [steel] hats gilded and wrought as above—two for the duke with clasps[79] and bosses of silver gilt, and the rest of gilded brass.

13. The thirteenth meat-course was of venison and beef in moulds.[80] The fish-course was of fish turned inside out (?).[81] —The gifts were six beautiful little steeds,[82] with gilded head-stalls,[83] with reins[84] and caparisons[85] of green velvet, and rosettes,[86] buttons, and tassels[87] of crimson silk attached to the caparisons.[88]

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[71] Agoni (*Cron. Monf.:* papari; Alip.: pavari, besides agoni).

[72] See Nos. 12, 13, 14, 18.

[73] See No. 12.

[74] See No. 12.

[75] See No. 12.

[76] Fibbie. Alip. substitutes here: a hat elaborately decorated with pearls.

[77] Ziverio (civiere, civerio), certo sapore.

[78] *Cron. Monf.:* salza; Alip.: acinerio zuccherato[!]

[79] Fibbie.

[80] Alip. adds: with sauce of sugar and lemon.

[81] *Cron. Monf.:* pesci riversati; Corio: pichi reversati; *Annal. Med.:* pechii reversati; *Frag.:* pighi reversati; Alip.: tinche grosse roversciate, con altri pesci.

[82] See No. 11.

[83] Briglie; brene.

[84] See No. 14.

[85] See No. 14.

[86] Fiocchi.

[87] Pendagli, pendoli.

[88] The four accounts do not altogether agree, and the details are somewhat obscure to me.

14. The fourteenth meat-course was of capons and fowls in red sauce and green, with oranges. The fish-course was of tench turned inside out. — The gifts were six great tilting-steeds with gilded headstalls,[89] reins of crimson velvet, and housings of crimson velvet, adorned with buttons, bosses, and tassels, all of gold.

15. The fifteenth meat-course was of peacocks,[90] with cabbage, French beans, and pickled ox-tongue. The fish-course was of carp. — The gifts were a doublet and hood of satin covered with pearls, and with a large flower wrought of pearls on the hood. Over all was a cloak lined with ermine, as was the hood, and also covered with pearls.[91] All these garments were carried to England.[92]

16. The sixteenth meat-course was of roasted rabbits, peacocks, fieldfares(?),[93] and ducklings. The fish-course was of roasted eels. — The gifts were a beautiful great silver basin, with an emerald, a clasp,[94] a ruby, a diamond, a large pearl set in a ring, and five silver belts (including one given after the day of the feast), gilded and enameled.[95]

17. The seventeenth course was of junkets and cheese. — The gifts were twelve splendid fat cattle.

18. The eighteenth course was of fruit, including cherries. — The gifts were two handsome coursers belonging to the Count of Vertu (Gian Galeazzo), one of which was named Lion, and the other Abbot. On the barons and gentlemen of the Duke

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[89] This is the realization of a poetic fiction (Virgil, *Æn.* 8. 168):

> Frenaque bina meus quæ nunc habet aurea Pallas.

Cf. Chaucer, *K. T.* 1648-9:

> The fomy stedes on the golden brydel
> Gnawynge.

[90] But *Cron. Monf.:* pipioni; Alip.: piccioni.

[91] *Cron. Monf.* extends this: 'Poi fu presentato uno mantelletto suffulto et fodrato d'armellino, uno farsetto et uno capucio di raso, quali tutti erano coperti de pelle [i. e. perle], poi uno manto et uno capucio facti a fascie, ornati de perle.'

[92] So only *Cron. Monf.*

[93] Cesani, cisoni.

[94] Alip. has: a clasp of diamond and ruby, with a pearl.

[95] *Cron. Monf.* adds: two beautiful jewels wrought of pearls, balas rubies, emeralds, sapphires, and other costly gems.

of Clarence were bestowed seventy-six[96] horses. All these were presented by the magnificent and noble lord Galeazzo Visconti, who was the steward of the feast, and who was accompanied throughout by twelve knights.[97]

Aliprando adds that after the ladies and gentlemen had washed, wines and confections were served; that Bernabò distinguished himself by his liberality, so that a song was made upon it; and that Galeazzo distributed robes, and Bernabò money, to the mountebanks, minstrels, and acrobats.

The *Chronicle of Montferrat* proceeds to detail the gifts made to seven of the chief men of the retinue, ending with the statement that the other seventy fared similarly.

The seven men were Sir Edward Despenser (called the Seneschal), Sir Edward Contenaim, Lord Bassett, Sir Hugh Despenser, Sir Thomas Granson, Sir Robert Assheton, and Sir John of Bromwych (Broncio). The typical gifts—one to each man—were (1) silver belts, gilded and enameled[98]; (2) pieces of cloth of gold; (3) jousting-steeds; (4) coursers. Individuals were distinguished by additional articles, or by more than one of a kind. Thus Edward Despenser[99] had two coursers, instead of one, and two pieces of gold brocade, with two pieces of silk brocade of Bagdad (*baldachino brocato*), instead of one piece of cloth of gold. Contenaim had one piece of gold brocade, and his cloth of gold (three and a half ells) was wrought with coronets, besides which he had three and a half ells of woolen cloth, wrought with the arms of Bavaria. Bassett, who was, next to Bromwych, the most shabbily treated of those named, had the belt, the cloth of gold, and a beautiful and valuable courser. Hugh Despenser's[100] cloth of gold was like Contenaim's, and he had three and a half ells of woolen cloth (*de Baucia,* which I cannot interpret). Granson[101] was distinguished by an additional courser, and two more when he went to England—four in all. Assheton[102] had two belts, one presented the day of the wedding, and one afterwards. Finally, Bromwych[103] had only a belt, and a fine courser when he went to England.

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[96] So Corio; *Cron. Monf.;* but *Annal. Med.:* 77. Jovius (p. 60) has the round number, seventy, and Aliprando a hundred and fifty, besides robes and jewels according to the rank of each. Cf. *Hist. Background,* p. 185.

[97] Corio; *Annal. Med.*

[98] See *Encyc. Brit.,* 11th ed., 7. 238. Devon (*Issues of the Exchequer,* p. 170) mentions a belt garnished with rubies, emeralds, and pearls, for which £18 (= $1350) was paid (July 6, 1359).

[99] See pp. 104 ff.

[100] Hugh Despenser and Lionel were brothers-in-law, having married two daughters of Gilbert, Earl of Gloucester, Lionel the first, and Despenser the second (Knighton 2. 31).

There must have been tilting,[104] as was customary on these splendid occasions, for the *Chronicle of Montferrat* records that for furnishing 30 jousters with everything requisite to make a becoming appearance (*de tutto quello che ricerca una degna giostra*) Galeazzo disbursed 72,430 florins.[105] Aliprando declares that every day—but does not say for how long—there were jousts and tourneys, band pitted against band. As for the ladies, they took pleasure in playing, singing, and dancing. He ends with comprehensive praise of

> quella corte grande,
> A' Visconti perpetual' onorare.

VIII. PETRARCH AT THE BANQUET

The chroniclers[1] all record the presence at the first table, among the civil and military magnates there assembled, of Petrarch,[2] who was generally regarded as the greatest man of his age.[3] Petrarch was there, Froissart was there, and perhaps Chaucer was there.[4] Froissart, then, probably saw Petrarch, and possibly Chaucer did; but is either one likely to have become personally acquainted with him? In attempting to answer this, we must reflect (1) that Froissart does not speak of such a meeting; (2)

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[101] Granson is subsequently mentioned in Rymer: May 8, 1369; July 1, July 8, Nov. 26, 1370; Oct. 29, 1372; Oct. 28, 1375; practically always as being in the king's service.

[102] Assheton (called Aston Feb. 11, 1366) was chancellor of Ireland from Oct. 24, 1364 till some time in 1366; was one of three to pay a sum of money to Lionel on Oct. 29, 1366, for the wages of his forces in Ireland (cf. *Hist. Background,* p. 188, note 1); had protection to accompany Lionel abroad, March 13, 1368; with Thomas de Dale, who had been associated with him in Ireland, had charge of arrangements for transporting Lionel's company from Dover to Calais in the spring of 1368; was admiral of the western fleet in 1371; justiciary of Ireland, 1372-3; in the train of John of Gaunt to go abroad, 1374; treasurer of England, 1376; chamberlain of England, 1377.

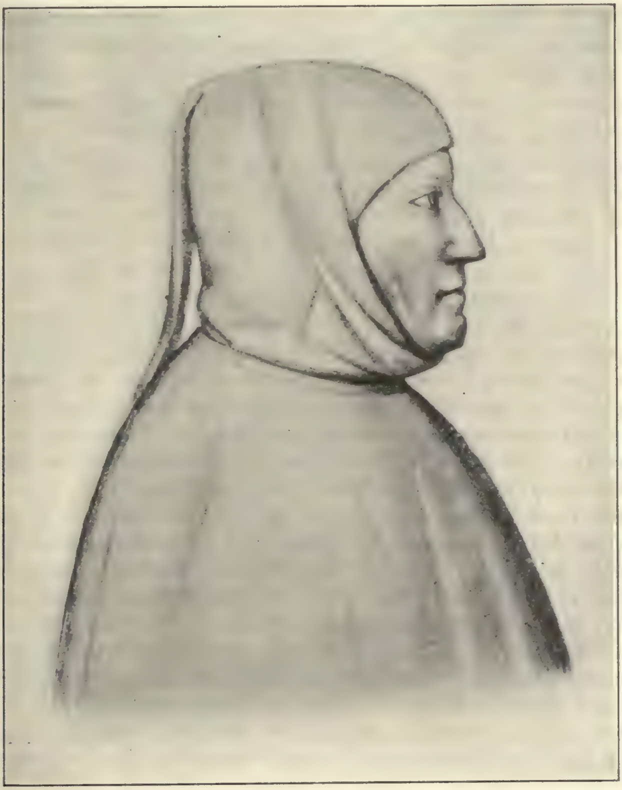
[103] For Bromwych, see pp. 97-8.

[104] See p. 60.

[105] Say $815,000; cf. p. 29.

[1] See also Magenta 1. 131-2.

[2] For the baseless story of Petrarch's Academy of thirty members at Linterno, all of whom were invited to the wedding and regaled the company with as many epithalamiums, see De Sade, pp. 722-3; Giulini 5. 516. Cf. *F. Petrarca e la Lombardia,* p. 109.



Petrarch.
(From Nolhac, *Pétrarque et l'Humanisme.*)

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[3] Magenta I. 109, note 4; Mézières, pp. 377-8; Hutton, p. 154. On Sept. 4, 1362, the governing body of Venice declared that there never had been a moral philosopher or Christian poet to compare with Petrarch (Körting, p. 362; Mézières, p. 378).

[4] Cf. *Hist. Background,* pp. 182-4.

that Petrarch was at the summit of his reputation, an ambassador to the courts of kings, an adviser and exhorter of popes, sought out by princes,[5] scholars, ecclesiastics, and poets of eminence; (3) that he was nearly 64 years old, and in failing health[6]; and (4) that Froissart was 30 years of age, and Chaucer still younger, young men with nothing but unconsidered trifles to recommend them,[7] the works by which they are universally known lying still far in the future.

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[5] Cf. Mézières, p. 377.

[6] Körting, pp. 418, 437, 439, 442; cf. 405 ff. He wrote from a bed of pain (*doloris in lectulo*) on Jan. 13, 1368, between 4 and 5 o'clock in the morning (Körting, p. 418).

[7] *Hist. Background,* p. 184; De Sade 3. 722.

How wide was the difference between Chaucer's and Petrarch's judgments of literature may be shown by one or two examples.

Chaucer alludes with respect in the *House of Fame* (966 ff.) to the *Anticlaudianus* of Alain de Lille, an author from whose *Complaint of Nature* (see Moffat's translation) he draws in *Parl. of Fowls* 316 ff. Petrarch, on the other hand, referring in his *Apologia contra Galli Calumnias* to Alain's *Anticlaudianus* and to Jean de Hauteville's (fl. 1184) *Architrenius* (printed in Wright's *Anglo-Latin Satirical Poets and Epigrammatists of the Twelfth Century;* cf. his *Biog. Brit. Lit.: Anglo-Norman Period,* pp. 250-256), says of the *Architrenius:* 'Of all that ever I read, nothing was ever more tedious than that *Architrenius* [wrongly printed as *Architrivio*]. . . . It gives the reader a nausea; it gives him a headache; it makes him laugh. . . . The *Anticlaudianus* is only a shade less wearisome than the *Architrenius.* Both these barbaric poets pour out floods of verbosity; both twist and struggle to no effect' (cf. Nolhac, *Pétrarque et l'Humanisme,* 2d ed., 2. 226-7).

The best authorities assign Chaucer's translation (cf. *Prol. L. G. W.* 255: 324) of the *Roman de la Rose* to his early manhood (Kittredge, *Chaucer and his Poetry,* p. 60; Legouis, *Geoffrey Chaucer,* p. 10; Root, *The Poetry of Chaucer,* p. 56; Skeat, *Oxford Chaucer* 1. lxii; Wells, p. 650), and so much of it as he translated ('apparently entire,' Kittredge says) he had probably done before Lionel's journey. Of the *Roman* he must have known long passages by heart (Kittredge, p. 61) before he wrote the *Book of the Duchess* in 1369. Nothing more is necessary to prove how highly Chaucer regarded the poem at this time. What was Petrarch's estimate of it? Between 1360 and 1369 he addressed a poetica epistle to Guido Gonzaga, Lord of Mantua (*Mantuæ domino*), who had requested Petrarch to send him the foremost work of French literature. Petrarch thus characterizes the poem (translation condensed):

> 'How far Latin surpasses all other tongues, Greek perhaps excepted you can learn from this little book, which France extols to the skies.

But there are other reasons which render an interview unlikely. In the first place, Petrarch, journeying from Padua, whence he

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and compares with the greatest ever written. In it a certain Frenchman tells his dreams to the multitude—the demands (*poscit;* al. *possit*) of Jealousy and of Love, how fire feeds the passions of the young man, what sport is plied by the crone, with what arts of Venus the mad lover arms himself against the plagues that stand at the door, what are his distress and sorrow, what his rest knit up with labor, what his alternations (reading *vices*) of laughter and lament, how floods of tears bedew his infrequent joys. How could there be greater scope for poetic eloquence? Yet the poet, in the very act of telling his dream, is himself lost in a dream, and his waking can hardly be distinguished from sleep. How much better did Virgil set forth the passion of love in the death of Dido, and how superior are Catullus, Ovid, and Propertius, not to speak of other Italians, ancient and modern! Nevertheless, since you are bound to have something in an outlandish (*peregrina*) vernacular, do not despise this gift of mine, since France and Paris proclaim it their best.'

Cf. Nolhac 2. 228; 1. 165-172.

The little book (*libellus*) must mean only Guillaume de Lorris' part, one would think, for the following reasons: (1) the complete poem, a manuscript of over 22,000 lines (in the whole of Petrarch's Italian verse there are fewer than 10,000 lines, while his Latin epic, *Africa,* is now less than one-fourth as long as the *Roman,* and, even had it been completed to scale, would have been less than one-third as long), could hardly be described as a little book; (2) Petrarch mentions one author (*Gallus*), not two; (3) there is nothing in his description which cannot be accounted for by Lorris' fragment, since the old woman, though her part is developed at much greater length by Jean de Meun, is introduced by Lorris (ed. Michel, p. 130); (4) he would have been slow to despatch the work of so immoral and indecent a poet as Jean de Meun (cf. Langlois, in Petit de Julleville's *Hist. de la Langue et de la Litt. Fr.* 2. 149) to a friend, since he calls Ovid's *Art of Love* an 'insane work, deserving to have been the cause of his exile' (Nolhac 2. 179-180; Körting, p. 486); (5) the allusion to the *Roman* in Petrarch's *Trionfo della Castità* is clearly to the earlier part (Nolhac 2. 227-8).

That Petrarch had no very high opinion of English scholarship in 1337 is clear from his statement (*Fam.* 3. 1) that, being curious concerning the location of Thule, he had asked Richard de Bury about it (this was at Avignon, in 1330), who had promised to look the matter up in his books when he returned to England, but, though frequently reminded, had never answered a word; 'ita,' adds Petrarch, 'mihi Tyle amicitia Britannica nihil notior facta est.' A few years later, as he tells us in the same letter, Gerald de Barri's book, *The Wonders of Ireland,* fell into his hands, but the author, after citing the opinions of several earlier writers, confesses that he thinks the island mythical, or that it is far away in the had not started till May 25,[8] did not arrive till the 29th[9] or 30th,[10] two days after Lionel, and then at Pavia. Secondly, he was suffering about this time, and for six weeks after, from an injury to his shin, which kept him under the care of physicians.[11] Thirdly, the chief purpose of his visit was not to attend the

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Arctic Ocean. Not much more flattering is the view of English learning expressed by Boccaccio in his verses written on Petrarch's *Africa* (Corazzini, p. 250):

> Hispanus et Gallus, *studiis tardusque Britannus.*

[8] *Sen.* 11. 2.

[9] So De Sade 3. 719; Fracassetti 1. 187.

[10] So Körting, p. 437; but Magenta (1. 133) says May 31. Petrarch's letter says: 'VI illuc die, hora tertia, perveni.' This would seem to indicate 9 o'clock, or earlier, on May 30.

[11] Writing on July 21 to Francisco Bruni, he speaks of this affliction (*Sen.* 11. 2): 'Illico rediturus fueram, non obstante tibiæ collisione, qua in parte corporis a pueritia parum fœlix fui, et quæ me tum sæpe olim, tum per hos dies complusculos afflixit, invisasque [Petrarch had no opinion of doctors] inter medicorum manus usque nunc detinet.' This was not the first time he had suffered from an injury to his left leg. In 1350, when he was traveling to Rome for the fifth time, the horse of one of his companions, an old abbot, came up on his left side, and, lashing out with his heels at Petrarch's horse, struck the poet instead, just below the knee. This happened between Bolseno and Viterbo, and it took him three days more to go from Viterbo to Rome (54 miles). The bruise festered, and when he wrote to Boccaccio on Nov. 2, he had already been in bed with it fourteen days, which seemed to him fourteen years, since his mind grew torpid when he could not stir about (*Fam.* 11. 1.) In 1359 a stranger incident befell him. He had a large volume of Cicero's letters, copied by his own hand some time before. This he kept on a shelf just beside the door of his library. On this particular occasion, as he entered the room, a flap of his garment caught on the book, and brought it down on the same left leg, this time just above the heel; the next day the same thing occurred again, and it was not till the book had fallen a third and a fourth time that he changed its place. Petrarch went about his affairs as usual, hoping the bruise would heal, but again it festered, and he had to submit to fasting, frequent fomentations, and absolute repose. He adds: 'It seems as though my many pains and aches had always, since my childhood, fastened upon this unfortunate left leg, and now it forces me to stay in bed, which I detest' (*Fam.* 21. 10). This was written on Oct. 15, but the accident must have occurred much earlier, for on Aug. 18 of the next year (1360) he writes from Milan to Boccaccio that a year after the mischance, finding things grow from bad to worse, he had dismissed the doctors and taken matters into his own hands; he had never suffered so much in his life, he says, but was now slowly recovering

wedding,[12] but to comply with the solicitations of Galeazzo, who had been urging him to confer with the Cardinal Anglicus de Grimoard, brother of Urban V, with reference to composing the strife between the Pope and the Visconti.[13] Fourthly, on the

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(*Var.* 25; Fracassetti 5. 301-2). Whether this leg suffered in his flight from Parma in 1345, when his right arm was injured, we do not know (cf. Fracassetti 4. 374). In any case, Novati (*F. Petrarca e la Lombardia,* p. 49) is convinced that it was an old wound, never entirely healed, and now aggravated by the long horseback ride, that was troubling him in 1368; but he supposes that it was received in the flight from Parma, apparently knowing nothing of the certain injuries.

[12] Novati (p. 49) exclaims: 'Behold him here amid the uproar of the wedding festival, under the necessity of taking part in interminable ceremonies, and of being present at no less interminable banquets. . . . Who can tell what Messer Francesco was thinking of, as all this Pantagruelian feast unrolled itself before his eyes?'

[13] Levati, *Viaggi di Francesco Petrarca* 5. 295-6; De Sade, pp. 718-9; Fracassetti 2. 240, 261; Körting, p. 437; Novati, p. 49; *R. I. S.* 15. 489-490; 17. 911. Cf. Petrarch, *Sen.* 11. 2:

> 'Scito igitur, me hinc [from Padua] . . . abiisse, magnis enim precibus et repetitis literis Ticinum [Pavia] iterum atque iterum evocabar, et quamvis naturæ meæ infesta æstas adventaret, meque hinc quietis amor stringeret, illinc status præsens et suspectum latrunculis deterreret iter, vigente tamen hinc ingrati metu, honestique inde specie animum attrahente, quod scilicet ad tractatum tantæ pacis evocatum me sentire, si fortassis ulla ex parte bono publico utilis esse possem, parui,' etc.

It must be remembered, however, that Petrarch had spent the summers of 1363-7 at Pavia (Fracassetti 1. 185; 2. 240; 5. 490; *Sen.* 5. 1; Hutton, pp. 209-210; cf. Körting, p. 404; according to Boccaccio's letter, quoted below, he must have been there in 1367 from ca. March 24 to ca. June 30; cf. Corazzini, pp. 123, 129), where his daughter and son-in-law (for Petrarch's attachment to him, see *Sen.* 5. 7; 10. 4) must have been residing at least temporarily, in 1368, since they regularly formed a part of his household as long as he lived (Rossetti, App. 3, p. 66; Mézières, p. 163; Bædeker, *Oberitalien,* 18th ed., Leipzig, 1911, p. 199; Magenta 1. 109); after 1368 he never returned (Giulini 5. 517). That he was fond of the place is shown by his famous letter to Boccaccio (*Sen.* 5. 1, written in 1365), a part of which I quote from the translation by Robinson and Rolfe (*Petrarch,* pp. 323-5):

> 'You would find the air of the place very salubrious. I have now spent three summers here, and I do not remember to have experienced ever anywhere else such frequent and plentiful showers with so little thunder and lightning, such freedom from heat, and such steady, refreshing breezes. You would find the city beautifully situ-

very day[14] of Lionel's wedding, Petrarch's little grandson[15] died

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> ated. . . . Commandingly situated on a slight elevation, and on the margin of gently sloping banks, it raises its crown of towers into the clouds, and enjoys a wide and free prospect on all sides, one which, so far as I know, is not exceeded in extent or beauty by that of any town which lies thus in a plain. By turning one's head ever so little, one can see in one direction the snowy crest of the Alps, and in the other the wooded Apennines. . . . Lastly, in order of time, though not of importance, you would see the huge palace, situated on the highest point of the city; an admirable building, which cost a vast amount. It was built by the princely Galeazzo, the younger of the Visconti, the rulers of Milan, Pavia, and many neighboring towns, a man who surpasses others in many ways, and in the magnificence of his buildings fairly excels himself. I am convinced, unless I be misled by my partiality for the founder, that, with your good taste in such matters, you would declare this to be the most noble production of modern art. . . . I leave here shortly, but very gladly return to pass the summer months—if fate grant me more summer months.'

[14] So Corio, p. 471: 'In questo dì medesimo, in Pavia morì,' etc.; cf. Giulini 5. 516; Fracassetti 2. 262; Mézières, p. 164. The date of May 19 (XIV Kal. Jun.; others read XIII) is rejected by Körting (p. 365, note 3), though, following Corio, he assigns June 15, instead of June 5 (the nones of June), as the date of the wedding.

[15] Corio says son (*fanciullo*), though the Francesca whom he names as the mother was certainly Petrarch's natural daughter, probably born in 1343 (*Encyc. Brit.*, 11th ed., 21. 311; Körting, p. 143) and married in Milan to Franceschino d'Amicolo da Brossano (called Borsano by Corio, and see below; Hutton, p. 213: 'Franceschino da Brossano di Amicolo'; Rossetti, p. 66: 'Franceschino Amicolo da Brossano'; Fracassetti 2. 260: 'Franceschino d'Amicolo di Brossano della Porta Vercellina'; Petrarch's will: 'Franciscolum de Borsano, filium quondam domini Amicoli de Borsano, civem Mediolani Portæ Verzelinæ') in 1361 (Körting, p. 365; Rossetti, App. 3, p. 66). A daughter, Eletta, must have been born to them in 1362 or 1363, since Boccaccio, writing to Petrarch on June 30, 1367, of his visit to the little family in Venice, after he had praised the charm of the father and mother, goes on (Hutton, pp. 213-4; cf. Corazzini, p. 124):

> 'Presently we were talking in your pleasant little garden with some friends, and she offered me with matronly serenity your house, your books, and all your things there. Suddenly little footsteps—and there came towards us thy Eletta, my delight, who, without knowing who I was, looked at me smiling. I was not only delighted, I greedily took her in my arms, imagining that I held my little one (virgunculam olim meam) that is lost to me. What shall I say? If you do not believe me, you will believe Guglielmo da Ravenna, the physician, and

in Pavia, a circumstance which filled him with unspeakable sorrow.

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our Donato, who knew her. Your little one has the same aspect that she had who was my Eletta, the same expression, the same light in the eyes, the same laughter there, the same gestures, the same way of walking, the same way of carrying all her little person; only my Eletta was, it is true, a little taller when at the age of five and a half I saw her for the last time. Besides, she talks in the same way, uses the same words, and has the same simplicity. Indeed, indeed, there is no difference save that thy little one is golden-haired, while mine had chestnut tresses ('aurea cesaries tuæ est, meæ inter nigram rufamque fuit'). Ah me! how many times when I have held thine in my arms, listening to her prattle, the memory of my baby stolen away from me has brought tears to my eyes—which I let no one see.'

Hutton proceeds to comment: 'It is perhaps in that letter we see Boccaccio better than in any other of his writings; the greatest man then in Italy playing with a little child, obliged in his poverty to accept assistance from one who was almost a stranger' [Franceschino had pressed upon him a considerable gift at parting].

Students of the Middle English poem, *The Pearl* (see Osgood's edition), will not need to be reminded of Boccaccio's *Eclogue XIV* (about 1360, according to Osgood), with its vision of his little daughter (d. 1355; see Hecker, *Boccaccio-Funde,* p. 84), Violante (there called Olympia, but here, in compliment to Petrarch, designated as 'my Eletta').

By February, 1366, another child, this time a son, was born to the pair. This happened at Venice, according to Körting (p. 365), Fracassetti (2. 240), and Mézières (p. 164). His epitaph, however, calls him 'Mediolanensis,' and to this there seems no objection, since Petrarch was accustomed to pass the summers of 1363-7 at Pavia (see p. 79), and we know, according to *Sen.* 9. 2, that he—and therefore probably his daughter (see p. 79)—was in the country near Milan on Nov. 1, 1366, and do not know of his presence at Venice (*Sen.* 6. 1) in that year later than Jan. 25, while he had been at Padua (*Sen.* 5. 1) as late as Dec. 14, 1365. The child was christened Francesco, a name suggestive at once of his father, mother, and grandfather. Petrarch's son, Giovanni, who had been a great disappointment to him, had died of the plague in 1361, so that all his domestic affections were concentrated on his daughter's family. This is clear from the letter (*Sen.* 10. 4) written after the grandson's death. In this he declares that the child was dearer to him than if it had been his own, since it was born of two whom he so greatly loved, and that he doubted whether he had ever loved anything more. Hardly was the babe a year old before friends remarked on its resemblance to Petrarch. It was a melancholy satisfaction to the poet that Galeazzo, who had seen the death of his own infant with dry eyes but a short time before, could scarcely even hear of the death of the little Francesco without tears. Petrarch

Petrarch arrived at Pavia, then, where he was doubtless the guest of Galeazzo at the Castle, two or three days after

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had, he tells his friend, erected at Pavia a marble memorial to the child on which six elegiac distichs of his own composition were inscribed in golden letters—a thing which he would hardly have done, he says, for any one else ('Bustum ego marmoreum illi infantulo, apud Ticini urbem, bis sex elegis inscriptum, literisque aureis exaratum statui, quod vix alteri facerem, et mihi ab altero fieri nollem. . . . Hoc ultimum et inane tribuerim obsequii genus; et si non sibi utile, gratum mihi, hoc illi igitur sacrum volui, non causam lachrymis, ut Maro ait, sed memoriæ, non tam meæ, cui nec saxo nec carmine opus erat, quam eorum quos illuc casus attulerit, ut sciant quantam ille suis ab ipso vitæ principio charus fuit').

These lines have fortunately been preserved. The memorial was erected in the church of San Zeno (one of the 101 churches standing in 1320 within the walls of Pavia, a city which now boasts something like 30,000 inhabitants; see *Rer. Ital. Script.* 11. 9), which was suppressed in 1789. Thence it found its way to the collection of Marquis Luigi Malaspina di Sannazaro (Fracassetti 2. 262), who published the verses (p. 43) in his collection of lapidary inscriptions (*Iscrizioni Lapidarie,* in two parts, Milan, 1830-32, folio; cf. Giovanni Voghera, Tav. XIII of his *Antichità Pavesi,* Fasc. 1-16, Pavia, 1827, folio), and is now preserved on the wall of the staircase of the Museo Civico, which was formerly the Palazzo Malaspina (Bædeker, *Oberitalien,* 18th ed., Leipzig, 1911, p. 199; but G. Natali, *Pavia,* pp. 136 ff., says that the Palazzo Malaspina is on the site of San Zeno, and next door to the Museo Civico), in the immediate vicinity of the former church (there is a Vicolo San Zeno near, with a bust of Boethius, on the spot where his prison is supposed to have stood). The date is 'MCCCLXVIII, XIV. Kal. Iunias, hora IX' (Fracassetti 2. 262), and the child is described as 'pulcher et innocens.' The inscription is in a square Gothic character. A copy of the verses, in Roman letters, is also to be found, without the date, in the lower cloister of the Cathedral of Treviso, where Francesca, the child's mother, died on Aug. 2, 1382 (*Poesie Minori,* p. 67). There are slight differences between the two inscriptions, that at Treviso having been evidently made from the earlier one at Pavia. The Pavian copy follows (from Rossetti, App. 1, Epigraphe 4; see also Mézières, pp. 166-7; Fracassetti 2. 262; De Sade, pp. 723-4; Magenta 1. 133, note 2), with the variants of the Trevisan:

Vix mundi novus hospes iter [eram], vitæque volantis
    Attigeram tenero limina dura pede.
Franciscus genitor, genetrix Francisca; secutus
    Hos, de fonte sacro nomen idem tenui.
Infans formosus, solamen dulce parentum,
    Nunc [Hinc] dolor; hoc uno sors mea læta minus:
Cætera sum felix, et veræ gaudia vitæ
    Nactus et æternæ, tam cito, tam facile.

Lionel and his retinue had arrived at Milan. At Pavia he would have had every reason for staying until (say) June 4, when he would almost necessarily have arrived at Milan, against the wedding of the following day. Among these reasons would have been his dislike of summer heat,[16] his love of quiet,[17] his general predilection for Pavia,[18] the condition of his leg,[19] his desire to be with his daughter's family as much as possible, his occupation with Galeazzo's affairs (Galeazzo's seat was primarily Pavia, as Bernabò's was Milan), and very possibly also the illness of the little Francesco, whom we need not assume to have died on the very day he fell sick. We may suppose him to have planned to return on June 6 from Milan to Pavia, for most of the reasons which have been detailed, and not least that he might be with his daughter and her husband in their sorrow, and assist in the preparations for the funeral. This, however, was not to be (see p. 85). In fact, we know that it was nearly a month before he could leave Milan. Writing from Pavia to Giovanni da Mandello on July 6, he tells his correspondent that he had left Milan on July 4, though he had not yet recovered, because he wished to escape from the noise and confusion, but that the horseback ride to Pavia had again aggravated his sore. He is

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Sol bis, Luna quater, flexum peragraverat orbem,
  Obvia mors, fallor, obvia vita fuit.
Me Venetum terris dedit urbs, rapuitque Papia;
  Nec queror, hinc [hic] cælo restituendus eram.

This may be translated:

> 'A newly arrived guest of the world, I was but just beginning my journey, and had scarcely touched with my tender feet the rough threshold of the life that hastens away. My father was Francis, and Frances my mother; from them did I receive my name at the baptismal font. I was a beautiful child, the lovely solace of my parents, but now their grief. On this account alone is my lot less joyous, since for the rest I am happy, having attained thus early and easily the joys of the true life, the life eternal. Twice had the sun measured the orbit of the world, and four times the moon, when death—nay, rather life—stood before me. Venice gave me to the earth, and now Pavia has snatched me away; but I mourn not, since it was fitting that from here I should be restored to heaven.'

[16] See p. 79.

[17] See p. 79.

[18] See pp. 79-80.

[19] See pp. 78-9.

hardly able to rise from bed, he says, and then is all of a tremor. On his journey by boat, with Venice as his destination, he hopes to see the Emperor (Charles IV), who had permitted him to come, and now commands him to return.[20]

Petrarch talks of returning to Venice, but he actually proceeded to Padua, arriving there on July 19. On July 21 he wrote[21] that he would have returned much sooner, notwithstanding the injury to his leg, had it not been that the land-route (by which he had almost certainly come; cf. Novati, p. 49) had been rendered impracticable by the prevailing military activities, and that he had the utmost difficulty in persuading a boatman to convey him down the Po for love or money,[22] over a month having been passed in this quest[23] and in overcoming a variety of obstacles.[24]

Thus, ignoring the age and eminence of Petrarch, and the youth and comparative obscurity of Froissart and Chaucer,[25] and ignoring the fact that neither Froissart nor Chaucer alludes to such a meeting, we see that there are reasons enough in the bodily infirmity of Petrarch, and his preoccupation with state-affairs, to render such a meeting unlikely. Moreover, as he went straight to Pavia from Padua, did not arrive till May 30, presumably had no occasion to be in Milan till the eve of the wedding (while Lionel's retinue had arrived on May 27), must have watched over a sick-bed up to the moment of his departure for Milan, and thenceforth, as soon as the wedding-day was over, lay languishing with his festering wound until July 4, unable to return to Pavia, the probability of a meeting between Petrarch and the two young versifiers would seem to be excluded. And had they met, it would have been the meeting of a grave and aging student with sentimental and somewhat conventional rhymesters, of the companion and idol of princes with a yeoman of the king's household, and an amuser of noble leisures by rather tinkling minstrelsy, dependent for his livelihood upon chance doles and irregular patronage.[26] If Lionel's followers were admitted into the courtyard of the Broletto, and allowed to see the noble company at their magnificent feast, then, from afar off, Froissart and Chaucer may have had sight of Petrarch; but a closer acquaintance than this is against all the probabilities.

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[20] Novati, pp. 61-3, quotes the letter in full from which the subjoined extracts are taken: 'Tibia sinistra, vetus hostis mea, per hos me dies exercuit et in lectulo detinuit, unde vix adhuc tremebundus assurgo. . . . Nondum nempe convalui; nam strepitum licet ac tumultum confusionemque multiplicem perosus, majore nudiustertius urbe dimissa, in hunc cupide quasi portum ex procellis commigraverim, ulcus tamen meum illud equitando recruduit. . . . Mox Venetias, unde nuper abii, secundo alveo reversurus sum, salutato interim Imperatore, nisi castra permoverit procul a Padi ripa. Illo enim permittente veni, illo jubente redeo, hiis Ligurum dominisque utrumque probantibus.' Since we know that the Emperor was at Bologna on July 14 and 15 (*R. I. S.* 18. 181), and since Petrarch, after his return to Padua, says nothing of having met him, it is fairly probable that he did not.

[21] *Sen.* 11. 2; see p. 78.

[22] 'Ulla prece vel pretio.'

[23] Mense ibi integro, et amplius, inter navis inquisitionem et difficultates rerum varias absumpto.'

[24] Petrarch's main fear, he tells us, was of chance robbers, for his love of peace was so well known to both parties that he felt he had no danger to apprehend from the regular combatants. His friends endeavored to dissuade him from what they considered his insanity, but he persevered, and finally found a boatman who was reassured by his calmness. The river was full of armed boats, and the shores were lined with armed bands; but, while any one else would have been captured, killed, or at least robbed, his vessel was loaded with wine, game, fruit, and spices by the generosity of those who intercepted him, and his progress was only delayed by their friendly assiduities.

[25] In Petrarch's eyes a 'barbarian'; see pp. 23, 77.

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[26] In the *Buisson de Jonece* (230-369) he gives a list of his benefactors and benefactresses, among whom were Philippa of England; Blanche of Lancaster; the Lord and Lady of Coucy; Edward III (100 florins); the Earl of Hereford; Edward Despenser; the Duke of Bourbon; Charles V; the Duke and Duchess of Brabant; Pierre I, King of Cyprus (40 ducats); David Bruce; the Earl of Douglas; etc. Notable, in this connection, is his mention of the Green Count (339-347):

> Amé, le conte de Savoie,
> Je ne sçai se nommé l'avoie,
> Mès à Melans, en Lombardie,
> Une bonne cote-hardie
> Me donna de .xx. florins d'or;
> Il m'en souvient moult bien encor,
> Pour un tant que moult me valirent;
> Car onques cil ne me fallirent
> Jusqu'à tant que je vinc à Romme.

In 1366 he received a gift of six golden muttons, when a great concourse of minstrels came together at Brussels: 'uni Fritsardo, dictori qui est cum regina Angliæ, dicto die, VI mottones.' A year or so after Queen Philippa's death, he is glad to receive 16 francs (the franc then had the intrinsic value of 13.38 modern francs) from the Duchess of Brabant ('uni Frisardo dictatori') for a new book in French.

IX. LIONEL'S REMAINING LIFE

The Milanese annalist tells us that Lionel, after the consummation of the marriage, remained in Milan for some days, and then left for Alba. The chronicles of Saluzzo and Montferrat agree in stating that after the wedding Violante left for Pavia, while Lionel, with his retinue, betook himself to Alba. Before he had finished what he had to do there, he fell sick, and returned to Pavia, where he spent a few days. Thereupon he went back to Alba, and there died.[1] We have, in all, four months and twelve days to account for between his marriage (June 5) and his death (Oct. 17). As he was able to take part in a tourney on Aug. 16,[2] it is probable that he did not return to Pavia before that time; and as his will was made on Oct. 3, he must have been ill before then. With respect to the cause of his malady, Jovius[3] ascribes it to excessive feasting in a country where he was not yet acclimated, and intimates that while this was in progress he was living with Violante. However, his feasting in Milan can hardly have been the cause of his death; and, while there may have been banqueting at the Castle after his return from Alba, it must be remembered that he was ill before this return, that his illness seems to have been the cause of the return, and that in any case he stayed at Pavia but a few days. On the whole, it seems most reasonable to assume that he saw but little of Violante during their married life, being called away by the care of his province; that the sickness which caused his death was of no very long duration, and yet not excessively sudden in its operation; and that his return to Pavia would therefore naturally have fallen in September, perhaps late in the month. As the lingering illness which terminated in the death of the Black Prince seems to have originated in digestive disorders contracted during his sojourn in Spain, it is not unreasonable to assume that Lionel may have indulged overmuch in eating and drinking—consider his wedding-banquet!—and that the heat of a Piedmontese summer, his military exercises, and the labors and perplexities incident to his rule amid an alien people, and surrounded by open or secret enemies, are responsible for the rest, or would even have been sufficient of themselves. As for feasting, he does not seem to have been prostrated by that at Paris or at Chambéry; but in both these places the weather must have been cooler, and Lionel had then nothing to do but give himself up to the pleasure of the moment.[4]

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[1] Petrus Azarius (quoted by Benvenuto) concurs with these two chroniclers in saying that Lionel left Violante at Pavia—where she would naturally be most at home. In the next sentence there seems to be a corruption, for it runs: 'Nec umquam prædictus dominus Leonotus prædictis peractis Papiam redivit, sed, parva mora in Pedemontio protracta, Albam reversus diem clausit extremum.' But how could Lionel, after delaying a short time in *Piedmont,* return to Alba, seeing that Alba was itself in Piedmont? Perhaps the 'nec umquam' should be construed with 'peractis,' for *Cron. Saluz.* has: 'Ancora non habiando finito le cosse soe [*Cron. Monf.:* le cose predette], se amalo e ritorna a Pavia' (similarly *Cron. Monf.*). On this supposition, we might translate Azarius: 'Lionel, though he had never finished up the matters referred to above [but they were *not* referred to], returned to Pavia; but, making only a short stay here [reading *Papia* for *Pedemontio*], he went back to Alba.' This would then agree with the chronicles of Saluzzo and Montferrat, which evidently deserve our confidence.

[2] See p. 88.

[3] He writes: 'Sed non multo post Leonatus quum novæ nuptæ operam daret, intempestivisque conviviis ad patrii moris disciplinam, alieni cæli ignarus, intemperantius uteretur, ad Albam morbo consumptus interiit.' Thus translated by Stow: 'But not long after, Leonel living with his new wife, whilest after the manner of his owne Countrey, as forgetting or not regarding his change of ayre, hee addicted himselfe overmuch to untimely banquettings, spent and consumed with a lingering sickness, dyed at Alba.'

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[4] Knighton (2. 123; cf. *Chron. Angliæ* 61) affirms that his death was due to poison ('intoxicatus veneno interiit'), but then Knighton knows Galeazzo as Golias ('filiam Goliæ')—hardly a compliment, by the way—and calls Milan 'Meletum.' Moreover, his statement is contradicted by those of the Italian chroniclers, for Petrus Azarius and *Cron. Monf.* say that Galeazzo and all the Lombards lamented greatly over Lionel's death; and *Annal. Med.* that Galeazzo was beside himself ('effectus est velut demens') with excessive grief. This grief was natural enough, considering the hopes that Galeazzo had built upon this marriage, and the disorders which immediately followed (see below, pp. 104 ff.).

Hardyng confirms, on the whole, the statements of Jovius and the chronicles (p. 334):

> In whiche meane tyme his justes & his excesse,
> His great riot and wynes delicacie,
> His ghoste exiled out [of his corps] doutlesse,
> Afore the daye set of his regence,
> For whom was made great mone through Italie.

Of the adventures in which Lionel may have been engaged between his marriage and his death, we catch sight of only one. A branch of the house of Savoy had acquired what proved to be the merely nominal title of Princes of Achaia, through the marriage of Filippo of Savoy to Isabella of Villehardouin[5] (her third marriage) on Feb. 13, 1301, she having by her second marriage become the mother of Mahault of Hainaut.[6] From this Filippo descended Filippo II, who succeeded to the Piedmontese dominions of his father Giacomo on May 7, 1367, though the latter, having regard to his evil conduct, had left the principality to his younger son, Amedeo, to whom Filippo was to do homage.[7] On March 17, 1368, Filippo made formal claim to the principality,[8] his brother being then, and until 1377, under the guardianship of the Green Count, Amedeo VI of Savoy. Strife having arisen between the two parties, Filippo challenged the Green Count to a tournament near Saluzzo, where, on a specified day, fifty were to encounter fifty. The Green Count, with Lionel, Giovanni II of Montferrat (ruled 1338-1372), and certain men sent by Galeazzo, arrived at Fossano on the day appointed, probably Aug. 16; but the craven Filippo repudiated his engagement,

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For Hardyng's 'wynes' we should perhaps read 'wyues,' i. e. 'wife's' (cf. Jovius); then 'delicacie' would mean voluptuousness. His 'regence' refers to the extravagant statement with which he had ended a previous stanza:

In citees all he helde well vnitees,
Greate justes ay and joyus tournementes,
Of lordes & knightes he made great assemblees
Through all the lande by his wyse regimentes;
They purposed hole by theyr commen assentes
To croune hym kyng of all [great Italie,]
Within halfe a yere for his good gouernaly.

On an earlier page Hardyng had said:

And all the rule he had by councell wyse,
Fro mount Godard vnto the citee [of] Florence,
And well beloved was for his sapience.

Barnes seems to go back to Froissart (see p. 104): 'Not without suspicion of being poisoned, by some subtle Italian trick, to prevent that Glory, which perhaps some Envy'd, that he should attain.'

[5] See Rodd 2. 39-58.

[6] See pp. 124-5.

[7] *Cron. Saluz.*, p. 1014.

[8] *Ib.*, p. 1012.

whereupon, after some fine skirmishes, Amedeo VI and his company went to Savigliano to pass the night, and thereupon each division went home. Filippo, being judicially condemned in December of that year, was publicly drowned in one of the three small lakes near Avigliana, by order of Amedeo (*Cron. Saluz.*), while his brother ruled till 1402.[9] So we see Lionel, having left Alba in the August heats, repairing on horseback to Savigliano, and thence to Fossano, on Aug. 15, to pitch camp against the following day; from Fossano returning to Savigliano for the night, and so back to Fossano, arrayed in armor for the tourneying, and once more, after the fruitless preparations, going back to lodge at Savigliano.

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[9] The two authorities are the chronicles of Savoy and Saluzzo. The former runs (*M. H. P.* 3 (*Script.* 1). 320-321):

> 'En soussi furent messire Philippe de Savoye et le marquis Frederich de Saluces quant sentirent venir le comte contre eulx, car ilz navoyent que pou de gens darmes, et, pour rompre la chevauchie du conte, messire Philippe luy manda ung herault, disant que sil osoit combattre sa querelle luy cinquante hommes darmes, que luy a tout aultres cinquante le combateroit corps a corps en la gallee [vailee?] entre Saluces et Escarnefis a un jour qui nomma. Entendant le conte les parolles du herault, respondit: "Vatant a ton maistre, et luy dist que a layde de Dieu je seray au lieu et en la place au jour que tu dis, accompaignie moy cinquantieme de hommes darmes pour combatre corps a corps noz querelles." A celle responce sen tourna le herault; et le conte, accompagne du duc de Clerance, du marquis de Monferra, et des gens de messire Galliache, ensemble les cinquante hommes darmes, vindrent devant Fossan, en requirant que le gage se tenist entreulx comme il estoit ordonne. Mais messire Philippe refusa la bataille et la promesse qui avoit faitte; le refus estre fait, eut la de belles escarmuches, qui durerent tout le jour de deux pars, et vers la nuyt le conte et sa compaignie se partirent de devant Fossan, et se alla logier a Savillian, et le duc de Clerance, le marquis de Monferra, et les gens de messire Galliace se retrayrent en leur pays. Et apres ne demoura gueyres que messire Philippe de Savoye fut mort, dont le pays de Piemont resta en grant pacifficacion.'

The latter is as follows (*M. H. P.*, pp. 1014-5):

> 'A 15 di Augusto esso Conte Ame dy Savoya cum exercito, una cum el Marchexe dy Monferrato e la gente soa, e missere Lioneto dy Angleterra (el quale ancora non era morto, ma mory quelo anno), andorono a Saviglano, poy de ly a Fosano, per piantarly el campo. Pur tornorono quelo giorno medemo a Saviglano, cum lo exercito loro. Poy, il giorno da presso, tornorono tuty a Fosano, dove era el signor Philipo, fratello del Principe dy Achaya.'

This meeting with Filippo at Fossano was not the first time that Lionel encountered him. While the duke was at Pavia or Milan, we are not certain which, but probably the former,[10] he had heard Filippo called traitor and felon by the Green Count in the presence of himself and Galeazzo. Amedeo having demanded justice against Filippo, Lionel personally arrested the latter, and cited him to appear before his tribunal on May 30. Here he seems to have pronounced a decision unfavorable to Filippo, who thereupon announced his intention of appealing to the parliament—if so it may be called—which was to be held at Rivoli,[11] and thereupon returned.[12] It is somewhat curious that even a purely nominal lord of Clarentza, in Greece, should be cited before the tribunal of a Duke of Clarence, his feudal superior, in Italy, considering that this Duke of Clarence was a royal prince of England.[13]

X. LIONEL'S DEATH AND BURIAL

The date of Lionel's death was certainly Oct. 17,[1] 1368, though even the *Dictionary of National Biography* has it wrong.[2]

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[10] Since Lionel would hardly have cited him on May 27, or later, to a tribunal held on May 30. *Cron. Saluz.* (p. 1013) says that Filippo and his brother went to Milan and Pavia in April, but, as it adds that they made many demands on the one side and the other, and were finally reconciled by Galeazzo, it is possible that they may have remained in those parts till toward the end of May.

[11] See p. 43.

[12] Gabotto, in *Misc. di Stor. Ital.* 33. 169.

[13] Cf. pp. 122 ff.

[1] The Inquisitio post Mortem (43 Edw. III, File 208, No. 23, Public Record Office), dated July 12, 1369, says, under the county of Somerset: 'Dicunt [the jurors] quod idem Dux obiit decimo septimo die Octobris, anno regni Regis nunc Anglie quadragesimo secundo' (adding that his daughter Philippa was 13 years old on Aug. 16, 1368); under the county of Essex: 'Dicunt quod idem Dux obiit xvii die Octobris ultimo elapsi' (similarly as to Philippa). In the *Annals of Ireland* (*Chartularies of St. Mary's Abbey, Dublin,* ed. Gilbert, 2. 397) we read: 'In vigilia Sancti Luce Evangeliste, Dominus Leonellus, Dux Clarencie, obiit apud Albe in Pymond.' Walsingham has (1. 306): 'circa festum Nativitatis Beatæ Mariæ,' i. e., Sept. 8. *Cron. Monf.* has Oct. 15.

[2] Correctly given in Dugdale, *Baronage* 2. 167-8; Barnes; Sandford, p. 223.

As to the disposition of Lionel's body authorities differ. According to Froissart,[3] it was embalmed, and sent home to England by Galeazzo.[4] The *Annals of Ireland*[5] (as above) declare that he was first buried in the church of S. Pietro Ciel d'Oro in Pavia,[6] and afterwards[7] in the Augustinian monastery of Clare,[8] in Suffolk. On the other hand, Capgrave[9] relates that Lionel, when dying, ordered his attendants to convey his heart and bones to Clare, and to bury the rest of his body (*carnibus suis cum visceribus*)[10] in front of the tomb of St. Augustine, where Henry, Earl of Derby, saw his resting-place in 1393[11]; but there is nothing of this in his will,[12] which orders that his body shall be buried before the high altar in the choir of the abbey church at Clare. Galeotto del Carretto,[13] the mediæval chronicler of Montferrat, confirms the statement of Capgrave. What is certain is that the whole, or some part, of his body was buried at Clare before 1377, for on Sept. 12 of that year the prior of Clare and brother Robert of the same monastery come to an agreement respecting the sum of ten marks, to be paid by the said Robert in satisfaction of the expenses[14] incurred for the funeral of Lionel.[15] Moreover, we have the testimony of a manuscript, in English and Latin, formerly belonging to Augustine Vincent (1584?-1626), and quoted by John Weever (1576-1632) in his *Ancient Funerall Monuments* (folio, 1631). This manuscript, or its prototype, was written in the lifetime of Richard, Duke of York,[16] father of

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[3] Kervyn 7. 251-2.

[4] So also *Annal. Med.* (*R. I. S.* 16. 740); cf. Kervyn 7. 251: 'Touttesfois messires Galéas envoya le corps embausmé de monseigneur Lion, duc de Clarense, par un evesque, arrière en Angleterre; là fu-il enseveli.' The *Chron. Plac.* makes the astonishing statement that his body was in that year carried to Apulia (*R. I. S.* 16. 510).

[5] 'Primo sepultus in civitate Papie juxta Sanctum Augustinum Doctorem [see *Hist. Background,* p. 195], deinde sepelitur apud Clare, in conventu Augustinensium in Anglia.'

[6] Petrus Azarius, as quoted by Benvenuto: 'Et ipso mortuo in Papia [*sic*] portato, Papiæ traditus fuit sepulturæ'; *Cron. Saluz.:* 'fu portato a Pavia.'

[7] So Beltz, *Mem. of the Order of the Garter,* p. 131; Sandford, p. 223 (copied by Rapin, *Hist. of England,* 1743, I. 439; cf. Nichols, *Wills,* 1780, p. 91). Sandford seems indebted to Barnes, p. 720: 'Tho for the present he was deposited in the Chief Church of Pavia, a City of Milain, yet soon after, according to his Testament, his Body was brought over into England by Thomas Newborne Esquire [whom Barnes makes one of his legatees], and others of his Domesticks, and interred in the said Church of the Augustine-Fryars, at Clare aforesaid, near unto the Body of his First Wife, Elizabeth de Burgh.'

[8] Probably founded in 1248, and the first settlement of the Augustinians in England; suppressed in 1538 (*Vict. Hist. of Suffolk* 2. 127-8). In 1821 the church was at the northeast side of the friary, and used as a barn (R. C. Taylor, *Index Monasticus,* quoted in Dugdale, *Monasticon,* 1849, 6.[3] 1600).

[9] *De Illustribus Henricis,* quoted in *Derby Accounts,* p. cxi; so Kervyn 21. 2, 3.

[10] Professor Tout, speaking of Edmund Mortimer, third Earl of March, remarks (*Dict. Nat. Biog.* 39. 121): 'According to the directions in his will, March's body was interred on the left hand of the high altar of Wigmore Abbey (Nichols, p. 104). An Irish chronicle speaks of his being buried in the church of the Holy Trinity at Cork, *but this probably only refers to the more perishable part of his body.*'

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[11] The remains of Augustine were, according to tradition, carried in 496 from Hippo to Sardinia, and thence removed by Liutprand to Pavia in 723. The beautiful shrine which stands behind the high altar, and bears the date of 1362, was probably executed between 1360 and 1380, and therefore was not completed at Lionel's death in 1368 (Natali, *Pavia e la sua Certosa*, Pavia, 1911, pp. 34-5; *Le Chiese di Pavia*, Part I (in the series entitled *L'Italia Monumentale*), Milan, 1913, pp. 35-9; cf. Venturi, *Storia dell'Arte* 4. 592-605). In Magenta (p. 164), where, as in the preceding, the shrine is represented, there is a fuller account of its history. Magenta declares that the shrine was begun on Dec. 14, 1362, that the foundation was laid in the sacristy of the church, and that it was completed in 1370. It remained in the sacristy at least till after 1461, at which time the bones of the saint were reputed to lie in a chapel of the crypt; they were, however, not rediscovered till 1605 (*op. cit.*, pp. 163-4). It is therefore no doubt in the crypt that the earlier resting-place of Lionel's remains is to be sought, if we assume that Capgrave is to be believed (but cf. p. 95).

As the resting-place of Boethius (see the picture of the tower where he is supposed to have been imprisoned, in Magenta 1. 162), S. Pietro in Ciel d'Oro was celebrated by Dante (*Par.* 10. 127-9), where he speaks of the philosopher's soul:

> Lo corpo ond' ella fu cacciata giace
> Giuso in Cieldauro, ed essa da martiro
> E da esilio venne a questa pace.

('The body whence it was chased forth lieth down below in Ciel d'Oro, and itself from martyrdom and exile came unto this peace.')

In a famous letter of Petrarch's to Boccaccio, written probably in 1365 (cf. p. 79), he thus refers to S. Pietro: 'You would have seen where St. Augustine is buried, and where Boethius found a fitting place of exile in which to spend his old age and to die. They now repose together in two urns, under the same roof with King Liutprand, who transferred the body of St. Augustine from Sardinia to this city. This is indeed a pious and devout concourse of illustrious men.' Boccaccio also refers to the church (*Dec.* 10. 9). An Augustinian monastery was erected at the right of the church in 1327 (Natali, p. 33).

[12] Though Kervyn says otherwise (21. 2-3).

[13] *M. H. P.*, p. 1212: 'De la cui morte Galeatio e tutti gli Lombardi molto se dolsero, et portato morto in Pavia cum infinite spese, et in parte mandato in la patria, fu sepellito in Pavia.' Magenta (p. 135) says expressly: 'Morì il 15 [but see above, p. 90] ottobre del 1368, gettando in un profondo duolo la nostra Corte, che diede alle ceneri di lui sepoltura nella basilica di S. Pietro in Ciel d'Oro.'

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[14] The *Vict. Hist. of Suffolk* says (2. 128): 'The sum of ten marks was paid to the prior and brethren, in the chapter house, on 12 September, 1377, for their share in the funeral expenses.'

[15] The instrument, from the Registrum Chartarum Monasterii Heremitarum S. Augustini de Clare, follows from Harl. MS. 4835, fol. 42^b, last paragraph, with contractions expanded:

> 'Hec indentura testatur judicium et finalem concordiam inter priorem conventus Clare, ordinis Sancti Augustini, ex una parte, et fratrem Robertum de Clare, ejusdem ordinis et conventus, ex alia parte, de expensis factis per predictum fratrem Robertum circa funeralia nobilis domini Domini Leonelli quondam Ducis Clarence—quod a die confectionis presentium predictus conventus assignabit fratrem vel fratres ad satisfaciendum per missas, seu alia divina obsequia, pro X marcis per predictum Robertum providendis, quas sibi removebunt pro completa solucione pro expensis omnibus omnibus [*sic*] circa predicta funeralia factis aprius [MS. ap'us] usque ad diem confectionis presentium; unde se prefectus predicti conventus adquietat, et se obligat omnibus et singulis personis extra conventum predictum degentibus satisfacturum ad rationem expensarum supradicti funeris vindicantibus. Predictus vero conventus, ex altera parte, istam conditionem sibi promittit adimplere, ac eum adquietat de omnibus receptibus ratione et nomine predictorum funeralium aprius [MS. ap'us] usque ad diem confectionis presentium. Illa vero concordia judicialis fuit comprobata per fratrem Johannem Ergom, Sancti Thome doctorem permissorium ordinis et provincie, commissarium fratris Henrici, prioris provincialis ejusdem ordinis et provincie, in hanc causam specialiter deputatos [-um?], anno Domini M.CCC.LXXVII, die xii mensis Septembris, in loco capitulari conventus supradicti. In quorum omnium testimonium sigilla predicti commissarii, ac supradicti conventus, et fratris Roberti, huic indenture alternata sunt apposita.'

[16] Prominent in the Shakespearian *2* and *3 Henry VI*.

Edward IV and Richard III, and therefore before 1460.[17] The lines in question are (Weever, p. 735):

Fuit Elisabeth sibi nata
Altera, que egregio post . . . Leonello,
Ed. ter. innato, post fataque sic tumulato,
Ut vides, exigua pro tanto principe tumba,
Inque chori medio.

And in English (p. 738):

Q. Had she ony Issue? *A.* Yea sir sikerly.
Q. What? *A.* a doughtur. *Q.* what name had she?
A. Liche hir modir Elisabeth sothely.
Q. Who evir the husbonde of hir might be?
A. King Edwards Son the third was he,
Sir Lionel, which buried is hir by,
As for such a Prince too sympilly.

This makes it clear that Lionel was buried, as his will provided, in the middle of the choir; and that he rested by his wife, Elizabeth de Burgh, in a tomb which must have formed a striking contrast to that of his brother, the Black Prince, at Canterbury, for which the latter made such lavish provision in his will. It is equally clear that Lionel's body was not brought to England the year of his death, for we have a document,[18] written in December, 1368, on the part of Edward III, in which Edward Despenser and John of Bromwych are instructed that they are on no account to transport the body of Lionel to England, because of the grief it would occasion his relatives, but to give it solemn interment in Italy:

> Item, ils dirront as dits sire Le Despenser et monseigneur Johan coment le roi voet et leur prie qu'ils ordenent en toutes manières que le corps mon dit seigneur de Clarence soit solempnement enterrés par delà, sicome affiert à tieu seigneur, tant pur l'onour du roi come de lui, sans faire carier par deceà le corps ou nulle partie d'ycel, pur le doel et tristesse que le roi son pière, madame la roine se mière, messeigneurs ses frères et mes autres seigneurs et dames de son lignage ent prendroient.

As the Council of Trent (1545-1563) ordered the removal from S. Pietro of all the tombs but those of saints[19] (not excepting that of the Lombard king, Liutprand), Lionel's, if any trace of it remained, must have disappeared with the others. As late, however, as 1590, an inscription to his memory was placed against a column near the chapel of St. Appian on the right side of the church,[20] as being the site of his tomb. The inscription was due to Charles Parker (b. Jan. 28, 1537), who also erected in the cloister at Pavia monuments to Francis, Duke of Lorraine, and Richard de la Pole, Duke of Suffolk, who had been slain at the battle of Pavia in 1525. Having entered the Roman Catholic church, he went to Pavia in 1560,[21] and there remained in exile for thirty years.[22]

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[17] Cf. Weever, p. 739; *Dict. Nat. Biog.* 48. 176, 184.

[18] Brit. Mus. Cott. Claud. D. III, quoted by Kervyn 18. 490.

[19] Magenta, p. 163.

The inscription reads[23]:

D. O. M. Leonello Clarentiæ Duci Edouardi tertii Regis
Angliæ Fil. ducta Violanta Joannis Galeatii primi Ducis
Mediolani sorori Albæ mortuo atque hic anno saluti MCCCLXIIX
Honorificentissime in arca condito sublata postea
Concilii Tridentini decreto Carolus Pacherus de Morley
Anglus Clarentium stirpe ortus anno salutis MDXC
Exilii vero sui pro fide catholica XXX p.

By 1464 the place of his sepulture was in doubt in England, for Hardyng says[24]:

Some sayen he is buried at Melayn,
And other some saye at Clare certayn.

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[20] Bossi, in his unpublished *Memoriæ Ticinenses,* p. 86, quoted by Magenta, p. 135: 'In columna sive pila prope sacellum S. Appiani in latere dextero Templi.'

[21] *Dict. Nat. Biog.* 43. 239.

[22] How baseless was his claim to belong to the descendants of Clarence may be gathered from the following genealogical notes.

Charles' mother was, before marriage, Alice St. John, whose father was Sir John St. John, whose mother was Margaret St. John, *née* Beauchamp. By her second marriage, to John, first Duke of Somerset, grandson of John of Gaunt, she had a daughter, Margaret Beaufort, who, by her marriage to Edmund Tudor, Earl of Richmond, became the mother of Henry VII. Henry VII's queen, Elizabeth, was the daughter of Edward IV, who was the son of Richard, Duke of York, who was the son of Anne, Countess of Cambridge, who was the daughter of Roger, Earl of March, who was the son of Philippa, daughter of Lionel.

The inscription, as printed, gives his name as 'Pacherus,' doubtless for 'Parkerus,' since he was a younger son of Henry Parker, himself son of Henry Parker, Baron Morley.

[23] Magenta, p. 135.

[24] *Chronicle,* ed. Ellis, p. 334.

XI. LIONEL'S WILL

Lionel's will was drawn up at Alba, Oct. 3, 1368, just two weeks before he died. The bequests are[1]:

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[1] The will itself, from Nichols, *Wills of the Kings and Queens of England*, pp. 88-90, is as follows:

> 'In Dei nomine, Amen. Ego Leonellus, Dux Clarencie, sanus mente licet eger corpore, volensque debitum mortis prevenire, testamentum meum condo in hunc modum. In primis lego animam meam Deo et beate Marie et omnibus sanctis, et corpus meum ad sepeliend' in eccl'ia fratrum Augustinensium de Clare in choro ante magnum altare. It'm lego eccl'ie eorundem fratrum nigrum vestimentum meum cum toto apparatu. It'm lego eid'm eccl'ie pannum meum nigrum broudatum. It'm Violente uxori mee rubeum vestimentum meum cum coronis aureis cum toto apparatu. It'm eidem uxori mee omnia jocalia mea exceptis subscriptis. It'm d'no Joh'i de Bromwych militi unum dextrarium qui vocatur Gerfacon'. It'm lego d'no Ric'o Musard militi unam zonam de auro cum uno dextrario qui vocat' Maungeneleyn. It'm lego Barthe'o Pycot duas zonas de argento & deaurat'. It'm lego D'no Joh'i de Capell capellano meo unam zonam de auro ad faciend' unum calicem in memoriam anime mee. It'm eidem D'no Joh'i melius portiforium meum notatum. It'm eidem Joh'i unum par vestimentorum pauleatum cum albo & rubeo. It'm lego mag'ro Nich'o de Haddeleye unum parvum portiforium non notatum. It'm lego D'no Joh'i Wayte capellano unum portiforium notatum. It'm lego Thomæ Waleys unum circulum aureum, quo circulo frater meus et dominus creabatur in principem. It'm Edmundo Mone lego illum circulum quo in ducem fui creatus. It'm lego mag'ro Nich'o de Haddeley supradicto duo monilia de auro, blodio & viridi colore anamalat'. It'm lego Nich'o Bekennesfeld unum monile de auro cum duabus manibus inclusis. Item lego eidem Nich'o decem marcas annui redditus in manerio de Bremmesfeld ad totam vitam suam percipiend'. Et lego Rob'to Bardulf unum monile de auro ad modum cordis factum. It'm volo quod omnes annuli distribuantur inter valetos camere mee secundum disposicionem executor' meor'. It'm volo et executoribus meis injungo q'd nulla fiat bonorum meorum seu terrarum mearum saltim quas vendere seu donare possum aliquibus deliberacio seu dissipacio exceptis legatis supradictis, quousque debita mea secundum quod facultates mee ad hoc suppetunt plene persolvantur, et si quod residuum fuerit, volo quod sit in disposic'one executorum meorum. Hos vero constituo & facio hujus testamenti mei seu ultime voluntatis mee executores, videlicet Violentam uxorem meam, Barth'm Pycot et D'n'm Joh'm de Capell' capellanum, quibus adjungo D'n'm Joh'em de Bromwyche militem coadjutorem, non tanquam executorem.

To the church at Clare, a black suit with all the appurtenances, and a piece of embroidered black cloth.

To his wife, Violante, his scarlet robe embroidered with golden coronets, with all the appurtenances, and all his jewels except as otherwise devised.

To Sir John of Bromwych,[2] knight, a war-horse, named Gerfalcon.[3]

Acta sunt hec anno ab incarnacione D'ni millesimo tricentesimo sexagesimo octavo, indictione septima, mentis Octobr' die tercia, pont' sanctissimi in Xp'o patris ac d'ni n'ri d'ni Urbani divina providencia pape quinti anno sexto, in camera ip'ius d'ni ducis, infra muros civitatis Albanen' situat'; presentibus Nich'o de Bekennesfeld, Rob'to Bradwaye, Joh'e Bray, et aliis.

Et ego Nich'us de Haddeleye, clericus Miden' dioc' publicus auctoritate apostolica notarius, premissis omnibus et singulis supradictis dum sic ut premittit' agerent' et fierent una cum prenominat' testibus presens interfui, eaq' omnia et singula sic fieri vidi et audivi, scripsi, publicavi, et in hanc publicam formam redegi, signoq' meo consueto signavi rogat' in fidem et testimonium premissor'.

Probatio dicti Testamenti coram Will'mo Cant' Archiep' 6to Idus Junii 1369, apud Lambeth.

Regist' Witlesey, fol. 100.a.b. in the
Archiepiscopal Registry at Lambeth.'

[2] In his earlier manhood, John of Bromwych must have been of a wild and heady disposition, for on March 8, 1353, the constable of the Tower of London was ordered to release him without delay, on the understanding that he was in due time to make answer to 'the things which the king wishes to say against him' (*Cal. Close Rolls*); while on Feb. 7, 1357, he was pardoned 'with respect to the death of Walter of Bromyard, late burgess of Hereford' (*Cal. Pat. Rolls*). Feb. 16, 1361, he had a wife, Elizabeth (*Cal. Close Rolls*), probably the same as the Elizabeth, widow of Richard Talbot the elder, whom he is described as having taken to wife by Oct. 20, 1370 (*Cal. Pat. Rolls*), and who on Feb. 10, 1357 (cf. Jan. 26 and Feb. 8, 1358) was already the widow of Talbot (*Cal. Close Rolls*). By April 1, 1373, she was already dead (*Cal. Pat. Rolls*). Mar. 15, 1361 (so also Feb. 10, 1362), he was important enough to be summoned, with Edward Despenser and others, to a council to consider the state of Ireland, and to prepare for supporting Lionel, whom the king then designated (Rymer), and by May 10 (so Dec. 20, 1363) he was on a commission (*ib.*). By Mar. 8, 1364 (so May 26, 1367), he was already associated with Edward Despenser in the commission of the peace (*ib.*), and on Feb. 10, 1367, was with him in a commission of array (*ib.*). On July 8, 1368, he was summoned, with others, to return to his estates in Ireland (Rymer). On Sept. 22, 1374, he obtained protection to go abroad

To Sir Richard Musard,[4] knight, a golden girdle, and a war-horse, named Maungeneleyn.[5]

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with Edmund, Earl of March (Rymer). On Aug. 26, 1379, he went to Ireland, accompanied by 60 men-at-arms, 120 archers, and several knights (*Cal. Pat. Rolls*), and on Sept. 22 received his appointment as justiciary for Ireland, an office which he still held on Feb. 14, 1380 (*ib.*). On July 2, 1383, he was still justice of the peace, as he had been much earlier (*ib.*). He is mentioned on Nov. 14, 1385, but had apparently died before Sept. 25, 1388 (cf. May 29 and June 26, 1389; all *Cal. Pat. Rolls*). His executors are named on Aug. 17, 1389, first in order being his (second) wife, Katharine (*ib.*).

Concerning his relations with Lionel, three things stand out. First, before and after Lionel assumed the viceroyalty of Ireland, Bromwych was appealed to concerning the affairs of that island. Secondly, he had been associated, before the journey to Italy, with Despenser, Lionel's cousin and close friend (both being of Gloucestershire), in the commission of the peace. Thirdly, the king treated him with especial kindness because of his devotion to Lionel. Thus, in the document quoted above (p. 94) we read:

> 'Item, ils remercieront à monseigneur Johan de Bromwyche du bon service qu'il fist à monseigneur le duc en sa vie, et de la diligence quele il mist pur la salvation del honour du roi et du duc ès parties de Lumbardie, à ce que le roi est bien vraiement enformés, dont le roi lui sciet très-bons grées.'

And as late as May 13, 1371, the king showed his favor on this account, as will appear from the following document of that date (*Cal. Pat. Rolls*):

> 'Whereas, because John de Bromwice, 'chivaler,' who held and holds for life the town of Banowe and other lordships and lands in Jeripont and Ederdrym, co. Wexford, held in chief, with reversion to Elizabeth, his wife, and her heirs, did not come to Ireland or send men in accordance with the late ordinance for the safety of that land, nor did the said Elizabeth do so, the said lands were taken into the king's hand as forfeit and are still in his hand; the king, in consideration of the fact that John has made continual stay from the time of the said ordinance until now, first with Lionel, duke of Clarence, in the parts of Lombardy during the duke's life, and afterwards with Edmund, earl of March, the king's son, on the king's service in France and England, has pardoned the said forfeiture and has restored the premises to him for life with reversion as above.'

To be, or to have been, a loyal servant of Lionel's seems always to have been a passport to Edward III's grace. A few instances follow (all *Cal. Pat. Rolls* except the first):

1363, March 1. Grant of £200 annually to the Countess of Ormond for her husband's labors and expenses in the Irish wars, especially from the coming to Ireland of the king's dear (*carissimi*) son Lionel (Rymer).

To Bartholomew Pycot, two girdles of silver gilt.

To his chaplain, Sir John of Capella, a golden girdle, to make a chalice in memory of his soul; his better portas [portable

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1368, Aug. 1. William de Mundene is pardoned for the death of Geoffrey Elesbourne, 'the king being informed that he is staying in the parts of Ireland in the service of himself and his son Lionel.'

1369, Nov. 19. Haulus de Bohen, a minstrel, is granted sixpence (say $2.00) a day for life, 'for good service to the king and to his son.'

1370, Nov. 7. John Pitteman is granted £5 yearly, 'for long service to Lionel, late duke of Clarence.'

1371, May 10. John Comyn, who, on June 4, 1363, had attended the Duchess of Clarence to Ireland, and then remained there with Lionel (Rymer), having forfeited his manor of Kynsale for failure to repair to Ireland, or send men for the defense of that land, when so commanded, this manor was restored to his heirs, (1) because of good service in the king's wars in Ireland and elsewhere, (2) because he had leave to be absent from April 9 to Nov. 11, to attend Lionel abroad, (3) because he kept the manor in order to reimburse himself for his expenses in Lombardy, (4) because he died before he could return at Martinmas.

1372, May 4. The office of chief sergeant of the county of Kildare is conferred upon John atte Vise, 'for good service to the king and Lionel.'

1372, Oct. 16. Robert Bron is granted the chief sergeanties of the counties of Louth and Carlow, 'for good service done in the company of the king's late son Lionel' (ratified Oct. 8, 1373).

1374, Nov. 14. Nicholas Curteys has allowances from Aug. 26, in consideration of his good service to the king's son, Lionel.

The bearing of all this upon Lionel's character, the attachment he inspired, the king's affection for him, and Edward's corresponding willingness to reward Lionel's faithful followers, is not without interest in relation to Chaucer's conjectural sojourn with the duke in Ireland and Italy, and the grant to Chaucer of June 20, 1367 (cf. *Hist. Background,* pp. 179, 182).

[3] See *Hist. Background,* p. 72.

[4] Sir Richard Musard was, it appears, for twenty-two years (1361-1383) a retainer of Amedeo VI of Savoy, the Green Count, a period ending with the count's death. He was probably attached to the person of Lionel only during the time of the latter's journey from Savoy to Milan, and the interval between then and his death. In becoming the liegeman of Amedeo in 1361, he had reserved his duty to the King of England; and Amedeo showed his attachment to Lionel, whose marriage he had doubtless negotiated (see pp. 23 ff.), by transferring to him the services of so devoted an homager and friend.

The known facts concerning Musard are as follows:

1361, between June 6 and Sept. 17, he was for 17 days at Susa, and afterwards on a trip to Germany, in the interest of Amedeo (Gabotto, breviary], with musical notes; and a pair of vestments [trousers?], striped white and red.[6]

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in *Atti della R. Accademia delle Scienze di Torino* 34. 226, note 1). At this time he was called the Black Squire (there is a *Green* Squire mentioned under the year 1369 in *M. H. P.*, p. 1018). On Sept. 17, at the Green Count's camp near Carignano, he became the vassal of Amedeo (Claretta, in *Atti*, as above, 19. 958).

1362, Feb. 10, the acknowledgement of a debt of 100 florins is made to him at Chambéry. His wife is called Johannina, and he still the Black Squire (Claretta, p. 960). Later in the same year he becomes the fifteenth charter-member of the Order of the Collar, afterwards called of the Annunciata, at its founding by the Green Count (Claretta, p. 953). In the original documents he is called 'ung vailliant chivallier d'Engleterre, bon et hardy' (*M. H. P.* 3 (*Script.* 1). 295), and 'bonus, valens, et audax' (*ib.* 1. 612). The order was instituted in honor of the Fifteen Joys of the Virgin. The collar was made of linked laurel-leaves, enameled in green, with a pendant of three love-knots, having in the middle the Count's motto FERT (cf. *Encyc. Brit.*, 11th ed., 15. 865). The knights were to be without reproach, were not to forsake one another in life or death; and if any occasion of dispute arose between them, the disputants were to submit themselves to the judgment of the other members. Each knight was to recite every day fifteen Aves, and a monastery was founded for the salvation of the knights' souls, present and to come. On the occasion of the founding, a mass was first sung, and then a banquet set forth. The ordinances, which were proclaimed to the sound of trumpets and clarions, provided that an unworthy member should be expelled, that they should support widows and orphans, oppose false quarrels, and maintain loyalty. Then Savoy Herald proclaimed silence, and the Green Count said: 'My lords, know ye that I swear and promise to keep these laws, and I am the first to take this collar, not as lord, but as brother and companion, for it is an order of brethren.' After each had sworn his oath, and received his collar, John of Vienne, Admiral of France, being one, they all partook of the sacrament, kissed one another on the mouth, and sat down to the feast, the Green Count last of all (*M. H. P.*, as above, pp. 294-5). The rest shall be told in the words of the chronicler (pp. 295-6): 'Le service fust fait; la eust joye planyere; la furent dames et damoyselles; la fust cryee largesse; la eust acomplissement donneur, de joye et de liesse a comble mesure de tous instrumens, et ainsy dura celle feste trois jours, a joustes, a tournoys, a beours, a momeries a la nuyt jusques au jour. Lon ne soroit raconter les desduys et plaisances qui la furent faittes, et se il faisoit beau veoir les quinze chivalliers a tous leurz quinze colliers, tous vestus de mesmez, il ne le faut desmander, et ainsy fust encomensce lordre du noble collier de Savoye.'

1366, May 27, he was with the Green Count at Pavia, where Amedeo was one of the sponsors at the baptism of Valentina, daughter of Gian Galeazzo. At this time the Count was on his way to the East for the

To Master Nicholas of Hadley, a small portas, without notes, and two gold necklaces, enameled in red and green.

To his chaplain, Sir John Wayte, a portas, noted.

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deliverance of John Palæologus, Emperor of Constantinople (Claretta, p. 963; Le Roulx, p. 148). For the festivities on this occasion, when Amedeo gave Gian Galeazzo a charger worth 1000 florins, see Magenta 1. 129-130. Between Aug. 17 and 23, Musard was present with his master at the successful siege of Gallipoli. The walls were undermined, and the assailants entered at the breach (Le Roulx, p. 151; Claretta, p. 963). The Turkish bowmen pierced the feet of the Christians, which placed them *hors de combat*. Huguin de Virier, being otherwise engaged, did not see an advancing Turk, who succeeded in stabbing him, but at this his squire transfixed the Turk with his spear. Nothing daunted, the Turk advanced along the spear, in order to come to close quarters with the squire, but died before he reached the middle. The Christians advanced in the face of Greek fire, and of stones dropped from the walls. The rear-guard being in danger, the count flew to the rescue, and with him his standard-bearer, Musard, of whom the chronicler relates (*M. H. P.*, pp. 307-8): 'La fust messire Richart Musar qui la bannyere portoit du conte, le quel se mist sy avant et entra sy parfont en lestour quil rompist la presse des Turcs; et tellement le suyvist lavant garde, que les Turcs furent bien esbays, et la furent faittes maintes belles appertizes darmes entre Cristiens et Turc.' The Turks outside were put to flight, and the next morning it was found that the defenders had abandoned the city, leaving behind only some Greek prisoners, who cried out to the Christians that they might now enter without fear.

1367, Sept. 12, Musard receives 6 florins at Ferrara for expenses, the Green Count having now returned from his expedition (Claretta, p. 964).

1368, Oct. 3, he is mentioned in Lionel's will.

1372, July, in arraying his army for battle at Asti, Amedeo entrusts the guard of his person to Musard and another knight (*M. H. P.* 3. 327).

1373, Oct. 22, Musard is in attendance upon the Green Count in the castle of Rivoli, where Amedeo is settling a dispute between two noble families of Susa (Claretta, p. 965).

1377, Musard is dispatched by Amedeo on an important mission to Biella (Claretta, p. 965).

1380, he and another member of the Order of the Collar are sent on an embassy to Bernabò Visconti (Claretta, pp. 965-6).

1381, Aug. 8, he is present on one of the most glorious occasions of the Green Count's life, when the latter pronounces his decree as arbiter between the contending cities of Genoa and Venice (Claretta, p. 966; Muratori, *Annali d'Italia* 8. 397; *M. H. P.* 4 (*Jur.* 2). 858 ff.; *R. I. S.* 15. 797).

1382, July, Musard is with Amedeo when he joins the forces of Louis of Anjou for the invasion of Neapolitan territory (Claretta, p. 966; Amedeo left Chambéry toward the end of May, Cordey, p. 240).

To Thomas Waleys, the golden circlet with which his brother[7] was created prince.

To Edmund Mone, the circlet with which he himself was made duke.[8]

To Nicholas Beaconsfield,[9] a gold necklace, enclosing two hands, and ten marks annual pension for life on the manor of Brimpsfield [Gloucester].[10]

To Robert Bardulf, a gold necklace in the shape of a heart.

To the valets of his chamber, all his rings, distributed as to his executors shall seem good.

All other property, real or personal, to be kept for the payment of his debts.[11] Whatever then remains to be apportioned

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1383, March 1, Amedeo VI dies, and his body is transported to the seashore near Naples by Musard and others, who embark with it for the Ligurian coast. On April 23, Musard dies at Savona (Claretta, p. 967; cf. Cordey, p. 242, note 6; *M. H. P.*, p. 1029), and is buried in the church of St. John of Jerusalem (Claretta, *ib.*). In general, cf. Mugnier, *Lettres des Visconti*, pp. 20-23.

Gabotto (pp. 226-7) is tempted to identify him with Richard de la Vache, knight and chamberlain of Edward III, but this seems impossible (cf. Edith Rickert, in *Modern Philology* 11. 210 ff.).

[5] Can this have any relation to Gingelein, the 'fair unknown' of the Middle English *Libeaus Desconus* (ed. Kaluza, ll. 7, 13), referred to in Chaucer's *Sir Thopas* (189)? In that romance the prize of a contest is a gerfalcon (ll. 773, 787, 1023, 1030, etc.), and the hero is said (l. 1302) to have had adventures in Ireland (where Lionel had been viceroy).

[6] Cf. Racinet, Vol. 4: 'Les seigneurs, les damoiseaux prirent l'habitude [from about 1340] d'habiller leurs jambes de deux couleurs différentes: l'une était blanche, jaune, verte, l'autre noire, bleue, ou rouge; on portait même des souliers de couleurs différentes.' Cf. p. 49, note 59.

[7] The Black Prince (1330-1376). This was on May 12, 1343 (*Dict. Nat. Biog.* 17. 91).

[8] On Nov. 13, 1362.

[9] Beaconsfield was summoned to proceed to his estates in Ireland on July 28, 1368 (Rymer), along with Bromwych and John Comyn (see p. 99).

[10] Cf. *Cal. Close Rolls* for Sept. 1, 1374.

[11] Lionel must have been deeply in debt, perhaps because of the expenses incurred in Ireland. Already on Feb. 10, 1362 (Rymer), Edward III speaks of Lionel's remaining in Ireland at great charges (*ad sumptus excessivos*), when he had been there less than five months. On April 24, 1364, Lionel, who had had his salary advanced to 13s. 4d. ($50) a day on Nov. 12, 1362, when he was made duke, accepted a bond (but perhaps this is to be understood rather as an order on the treasurer) from Edward III for the whole of his stay in Ireland from the date

by the executors—Violante his wife, Bartholomew Pycot, and John of Capella,[12] to whom is added John of Bromwych, not as executor, but as coadjutor.

The witnesses were Nicholas Beaconsfield, Robert Bradway, John Bray, and others.

Nicholas of Hadley, clerk of the diocese of Meath, was the notary who drew the will, and affixed his seal.

The will was admitted to probate at Lambeth Palace, June 8, 1369, William Whittlesea being Archbishop of Canterbury.

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last mentioned (Rymer). In December, 1368, the king sends word to Edward Despenser and John of Bromwych (see p. 97) to save everything possible for the discharge of Lionel's debts (Kervyn 18. 490):

> 'Item ils dirront as dits sire Le Despenser et monseigneur Johan et leur chargeront depar le roi qu'ils mettent leur peine et diligence que si bien les joialx come monnoie, et tous autres biens et chateux qui feurent à monseigneur le duc par delà, soient sauvement gardés et si entièrement come l'en purra par aucune voie, pur acquiter ses dettes en descharge de sa alme.'

On Feb. 17, 1370, the king speaks of the large sums Lionel owed to various creditors, during his lifetime and at his death ('in non modicis pecuniæ summis diversis creditoribus, dum vixit et tempore mortis suæ, tenebatur'). Cf. *Hist. Background,* p. 188, note 1. It cost $13,400 merely to transport his retinue, on his journey to Italy, from Dover to Calais, 39 ships and 13 boats being required for 457 men and 1280 horses (Rymer, account of May 10, 1368). His total expenses for the journey to Milan were computed as $475,000 (Devon, *Issues of the Exchequer,* p. 192); but it is true that Violante's dowry was, in money, 100,000 florins = £15,000 = $1,125,000. The contrast between Lionel's poverty at his death and the property of the Black Prince will be apparent on consulting the latter's will (Nichols, pp. 66 ff.).

[12] Pycot (known also as Pygot) and Capella (also called Capell) are mentioned together as executors on Feb. 17 (Rymer) and Feb. 20, 1370, and on April 22, 1371 (*Cal. Pat. Rolls*). On Jan. 19, 1367, Capella is mentioned as being near Paris (Rymer), and on Sept. 4, 1367, Pycot receives protection till Feb. 2 to go abroad on the king's service (*Cal. Pat. Rolls*).

XII. DESPENSER AND THE VISCONTI

After Lionel's death, Edward Despenser,[1] who was next in command,[2] established his headquarters at Alba, and declined to restore to Galeazzo the Piedmontese places which formed part of Violante's dowry.[3] Thereupon Galeazzo declared war upon

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[1] Despenser (b. 1336?) was the second cousin of Lionel's first wife. He fought at Poitiers, and was a Knight of the Garter. Edward III calls him 'our dear cousin' on Nov. 21, 1374 (Rymer). He distinguished himself in the service of Urban V (d. Dec. 19, 1370), if we may trust the testimony of Walsingham (1. 309; cf. *Cont. Murimuth,* pp. 206-7): 'Pro Papa vero militavit Dominus de Spenser, qui laudabiliter se gessit ibidem post mortem Ducis Clarentiæ.' He died in 1375, leaving a son, Thomas, who became Earl of Gloucester. Froissart spent three days with him at Berkeley Castle in September, 1366 (Kervyn 2. 86), and celebrates him in the following lines (*Buisson de Jonece* 269-277):

> —'Et le grant seigneur Espensier,
> Qui de larghece est despensier,
> Que t'a il fait?'—'Quoi?' di je, 'assés;
> Car il ne fu onques lassés
> De moi donner, quel part qu'il fust:
> Ce n'estoient cailliel ne fust,
> Mès chevaus et florins sans compte;
> Entre mes mestres je le compte
> Pour seignour, et c'en est li uns.'

Elsewhere he calls him 'li plus jolis chevaliers, li plus courtois, li plus honnourables et amoureus qui fust en tout Engleterre' (Kervyn 2. 106); 'friche, gentil, et vaillant chevalier, et grant chapitainne de gens d'armes' (*ib.* 8. 280); 'gentil coers et vaillans chevaliers, larges et courtois' (*ib.* 8. 312). See also p. 73.

[2] 'Ipsius Leonoti gentium ductor' (Benvenuto).

[3] This would seem quite unjustifiable, in the light of the marriage-contract (see p. 29), which explicitly provides that 'defuncto dicto domino Leonello sine hærede de dicta domina Violante procreando, dominium dictarum terrarum ad præfatum dominum Mediolanensem, et ejus hæredes, integre devolvatur' (Rymer). Despenser's action is attributed by Froissart to the suspicion (see p. 88) that Lionel had been poisoned (Kervyn 7. 251; cf. 8. 112-3, 208):

> 'Vous avés bien chy-dessus oy comment li dus de Clarense fu mariés en Lombardie à le fille monseigneur Galéas, liquels dus, assés tost apriès son mariage, trespassa de ce siècle [en Ast en Piémont], dont ses gens furent moult esmervilliet; car il estoit jones chevaliers, fors et appers durement. Si souppeçonnèrent que on ne l'euist empoisonnet, et en fist guerre moult grande et moult forte li sires Despens-

him, and dispatched a body of troops to Piedmont, under the command of Azino Caymo and Giacomo del Verme. The latter were taken prisoners in an engagement, carried captive to Alba, and only released on the payment of a heavy ransom. Plucking up heart, and obtaining some men-at-arms from Bernabò, Galeazzo again endeavored to wrest the territories from the English. However, after his capture of Cherasco and some other places,

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> siers as seigneurs de Melans et à leurs gens, par le comfort d'aucuns chevaliers et escuiers et archiers d'Engleterre, qu'il avoit avoecq lui, et tint par le guerre les seigneurs de Melans moult court, et rua par pluisseurs fois ses gens jus, et y fu pris, dou costé des seigneurs de Melans, li sires de Montegny-Saint-Christoffle en Haynnau, et ossi messires Aimeris de Namur, fils bastars au conte Guillaumme de Namur, et fissent là li Englès une guerre moult honnerable pour yaux, et reboutèrent pluisseurs fois les Lombars et lors aidans.'

With reference to the suspicions of poison, Gian Galeazzo is reported never to have sat down with the nobles whom he feasted. He took his meals apart, and, 'ne more patrie inficeretur veneno,' first had every dish tasted by twenty of his officers (Religieux de Saint-Denys, ed. Bellaguet, 3. 134). On the effects of excess, particularly in relation to Lionel, see Michelet 5. 27; cf. 4. 160; 5. 118-120; Lavisse 4.^{1} 303-5. *Chron. Plac.* (*R. I. S.* 16. 546) calls him 'non bene ordinatum,' which probably signifies a certain lack of self-control.

But a no less valid reason is to be found in the desire of the English to anticipate the birth of a posthumous heir to Lionel, in which event Galeazzo would forfeit his claim upon the towns. This is made clear by a communication addressed to Despenser by Edward III in December, 1368, and dispatched by William de Aldeburgh and Robert de Wykford, Archdeacon of Winchester, on the occasion of their going abroad to treat with Pope Urban V, their commission dating Nov. 29, 1368 (Rymer). The earlier part of this letter runs (Kervyn 18. 489-490; see also pp. 94, 98, 103):

> 'Premièrement ils dirront au sire Le Despenser coment le roi ad bien entendu ses lettres et la crédence exposée de sa part à lui et à son conseil par Siffred son esquier, et coment le roi lui remercie du bon service qu'il fist à monseigneur de Clarence en sa vie et de les graunts diligence, peine et travalx, queux il mist pur la salvation del honour du roi et du sien ès parties de Lumbardie, et lui ent sciet molt espécialment bon grée, et pense par celle cause de lui faire et monstrer si bone seignourie en temps, avenir, ès choses qu'il avera affaire devers lui, qu'il soi ent tendra pur content, si Dieu plest.
>
> Item, ils remercieront par espécial à meisme le sire Le Despenser de ce que puis la mort mon dit seigneur de Clarence, il soi ad tenus en païs de Pymond sur le governement des terres qui feurent à mon-

a truce was arranged; the Marquis of Montferrat, Giovanni II (1338-1372), was invited to act as arbiter; and Despenser repaired to Pavia, where a treaty was to be negotiated. Just at this moment, the Marquis of Montferrat left for Pisa, to obtain certain privileges from Charles IV, and nothing further was done for the time being. Upon the Emperor's return to Bohemia in 1369, war again broke out between the Marquis and Galeazzo. With the assistance of Bernabò and Can Signorio della Scala of Verona, Galeazzo sent troops in July and August to the vicinity of Alessandria, and laid waste grain-fields and vineyards. By way of retaliation, the Marquis, assisted by the English, whom he had taken into his pay and persuaded still longer to retain the towns of Violante's dowry, burnt Blandrate and Garlascho, and carried off abundance of cattle. Luchino del Verme, in command of Galeazzo's army, took fright and ran away.[4] While these things were in progress, Despenser found himself in need of money to defray the cost of the occupation, and, on Oct. 27, 1369, borrowed 26,000 golden florins from the Marquis of Montferrat,[5] with the condition that he was to repay the sum in eight months. All the Piedmontese places were pledged as security, with the stipulation that the revenues derived from them in the meantime should be used to defray

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> seigneur le duc illoèques, et lui prie aussi de remercier depar le roi les gents demorants sur meismes les terres de la bone affection qu'ils ont au roi et de ce qu'ils désirent d'estre desous la seignourie et governement de lui, sicome lui estoit monstrés parmy la dite crédence, et dirront au dit sire Le Despenser coment le roi lui sciet graunts grées et se tient bien pur content de ce qu'il y ad ensi demorés, et voet et lui prie qu'il demoere sur le governement de meismes les terres sicome il ad fait, tanque l'en puisse savoir si madame la duchesse soit enceynte ou nom et tanque le dit sire Le Despenser en eit autre mandement du roi.'

From this letter it is plain (1) that Despenser had done Lionel good service in the duke's lifetime; (2) that Edward III approved of his having held the Piedmontese lordships; (3) and that the king was prepared to yield the properties as soon as it was established beyond doubt that Lionel was to have no posthumous heir by Violante.

[4] The basic account is that by Petrus Azarius, quoted by Benvenuto Sangiorgio (*M. H. P.*, pp. 1337-9 = *R. I. S.* 23. 559-560, cf. 554); cf. Galeotto del Carretto (*M. H. P.*, pp. 1212-4); Gioffredo della Chiesa (*M. H. P.*, p. 1013).

[5] Benvenuto (*M. H. P.*, p. 1337) says 'Secundoto,' but wrongly.

their running expenses, including the cost of the necessary measures of defense.[6]

The upshot of the whole matter is to be gathered from Froissart, who declares that Galeazzo cleared himself by oath of the imputation that he was in any way responsible for Lionel's death, and that Amedeo of Savoy, the astute diplomat and indefatigable negotiator, at length reconciled the contending parties (Kervyn 7. 252):

> Li sires Despenssiers s'apaisa à yaux, parmy tant qu'il s'escusèrent de le mort le duc de Clarense, et jurèrent que par yaux, ne par leur couppe, il n'estoit mies mors [en le fin, messires li contes de Savoie s'en ensonnia et les mist à acord].

From an independent source (*M. H. P.*, p. 1018) we learn that Galeazzo was in possession of several of the contested towns at the end of 1369 and beginning of 1370.

Barnes' account is characteristic (cf. Higden, *Polychr.* 8. 371):

> But the Lord Edward Spencer, who doubted some foul play had been used towards him, tarried still in Italy, and together with Sr. John Hawkwood, and his Englishmen, called the White-Company, made fierce War upon the Dukes of Milain, in Revenge of his Masters Death; till at last he was fully satisfied of their Innocence as to that point, and their great and unfeigned sorrow for the untimely loss of so Noble a Kinsman.

XIII. VIOLANTE'S LATER LIFE

As we have seen, Violante was a widow before she was 14, after four months of marriage.[1] We hear nothing of marriage again until 1374, when she was sought by the widowed Albert, Duke of Austria, but without result, as the Pope had forbidden that any princely house should intermarry with the Visconti.[2] On Aug. 2, 1377,[3] at the age of 22, she was wedded to a youthful monster, Otto, Marquis of Montferrat, commonly called Secondotto, then a lad of 15 to 18 years old.[4] He lived a year and four months—at least once in that period inflicting a wound on Violante[5]—and died as a result of his own cruelty on Dec. 16, 1378.[6]

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[6] See the original mortgage, *R. I. S.* 23. 554-9.

[1] See p. 86. *Cron. Monf.* (*M. H. P.*, p. 1228) conceives of her as living for a time with Lionel in England, and then returning to her father's house.

[2] See Giulini 5. 567-8; 7. 243-4; Magenta 2. 38.

[3] So *R. I. S.* 23. 594 (Azarius says May, *R. I. S.* 23. 597, and so *M. H. P.* 3. 1340). Negotiations to that end had been begun by Sept. 14, 1376, an agreement had been reached by March or April, 1377 (*R. I. S.* 23. 594;

Corio, p. 491), and an instrument confirming it drawn up on June 15 (*R. I. S.* 23. 594; cf. Muratori 8. 377), the object of the whole being to put an end to hostilities between Galeazzo and Montferrat (cf. *M. H. P.*, p. 1025. The wedding took place in Pavia, 500 gentlemen being present. The marriage was not consummated till November, 1377 (*R. I. S.* 23. 596; cf. Corio, p. 492). After remaining for a few days with Violante at Pavia, after the manner of bridegrooms ('secondo il solito de i maritati'), he rode away to Asti, in charge of which he had left a brother of his guardian (*R. I. S.* 23. 596; Corio, pp. 492-3). Being instigated thereto by Galeazzo (*R. I. S.* 23. 596), the latter refused Secondotto admission. In hot haste the Marquis returned to Pavia, and requested help from Galeazzo, who sent 300 lances (900 men), under the command of Gian Galeazzo, to his assistance. The joint army advanced to Asti, which they entered on Feb. 6, 1378. In the end, as Gian Galeazzo remained in possession of the city, and would not yield it up to the Marquis, the latter betook himself to Pavia, and made complaint to Galeazzo. This application resulting in nothing, he left Pavia in high dudgeon (*R. I. S.* 23. 596-7; Corio, p. 493).

[4] The evidence is somewhat contradictory: *R. I. S.* 16. 511, 541 (and so Giulini 5. 596), 762-3; *M. H. P.*, p. 1339 (and so Magenta 1. 136).

[5] 'Etiam vulneravit dictam Dominam Violantem uxorem suam' (*R. I. S.* 16. 541).

[6] Riding away from Pavia, as we have seen above, Secondotto directed his course toward Cremona, and thence into the diocese of Parma (*R. I. S.* 23. 597; Corio, p. 493), intending by that route to enter Montferrat (Corio; but Piedmont, *R. I. S.*, p. 770), in order to avoid passing through the territories of Galeazzo (Corio). Arrived at Lang(h)irano (*R. I. S.* 16. 770; 23. 597; but Mataleto, Corio), 15 miles south of Parma, he was about to hang, or strangle ('laqueo suspendere') a little lad of his suite ('infantem ejus ragazium,' *R. I. S.* 16. 770; Muratori 8. 383, 'un ragazzo di suo seguito'; Giulini 5. 596, perhaps without sufficient warrant, 'un ragazzo di un certo soldato Tedesco', and so Leo 3. 323), when a (*lit.* another, 'unus alter') German servant of his, roused to desperation, drew his sword, and struck Otto such a blow on the head that he died four days afterward. This is the account of the Milanese annalist (*R. I. S.* 16. 770), who explains that, carried away by an access of rage, the Marquis, as he passed along, was wont to slay with his own hands men, boys, and infants, and in this manner did actually kill considerable numbers. The *Chronicle of Piacenza* (*R. I. S.* 16. 541) says that as he was seeking to kill some of his servants, they, in defending themselves, gave him wounds of which

Thus a second time widowed, Violante returned to Pavia, this time to the care of her brother, Gian Galeazzo. He, terrified by the threats of his uncle Bernabò,[7] wedded Violante, not more than 26 years old, to the latter's son, Lodovico, then 22,[8] probably in April or May, 1381.[9] On May 6, 1385, as has been stated above,[10] her husband, with his father, Bernabò, and his brother, Rodolfo, was arrested and lodged in prison. In December of that year Bernabò died in confinement, having eaten, as was

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he died in 15 (*sic*) days. Benvenuto (*R. I. S.* 23. 597) affirms that on the 11th of December he was struck on the head by one of his servants, and died on the 16th; Corio (p. 493) adds, 'in a stable.' Jovius' words are: 'quum Otho in montibus Parmensium ab agresti agasone confossus, ignobili fato perierit,' which Stow (see p. 62) renders: 'being in the hils of Pavie [*sic*], stabbed through of a base horse-keeper, where he likewise died obscurely.' His body was carried into Parma, and buried before the high altar of the Cathedral (Benvenuto; Corio; *Annal. Med.*), being strewn with spices, and lapped in lead (*R. I. S.* 16. 770: 'in quadam cassetta plumbea cum aromatibus').

[7] Bernabò had prohibited Gian Galeazzo, his sons, and Violante, from contracting matrimony except with Bernabò's sons or daughters, and commanded his own sons to treat Gian Galeazzo as a deadly enemy if he disobeyed (*R. I. S.* 16. 797-8). The desire to placate Bernabò was at least partly responsible for the union of Lodovico and Violante (*R. I. S.* 16. 543), as well as for Gian Galeazzo's own marriage to Caterina, the daughter of Bernabò, on Nov. 15, 1380 (Rosmini 2. 149-150; Leo 3. 325-6).

[8] He was born in September, 1358 (*R. I. S.* 17. 499 says he was 28 years old in 1385), and probably baptized Sept. 30 (Sunday, Oct. 1, according to *R. I. S.* 15. 484, but that was Monday); cf. Magenta 1. 170-171; Rosmini 2. 89-91; Giulini 5. 433-4. His sponsors, the lords of Ferrara, Mantua, and Bologna, purchased their peace with Bernabò with costly christening-gifts (Muratori 8. 309); thus Aldovrandino III, Marquis of Ferrara, presented the infant with a silver vase, containing a golden cup full of pearls, rings, and precious stones (*R. I. S.* 16. 729; Corio, p. 457), the whole being valued at 10,000 florins (*R. I. S.* 15. 484). The occasion was celebrated with jousts and tournaments (*R. I. S.* 15. 629; 16. 729; Corio, p. 457). Lodovico was the second son, Marco being the first (Corio, p. 509). In 1378 he had accompanied his sister Valentina to Cyprus (*R. I. S.* 16. 771; cf. Giulini 5. 605), to be married to Pierre II (cf. p. 118).

[9] Corio, p. 500; *R. I. S.* 16. 543, 773-4; cf. Muratori 8. 395; Giulini 5. 623; Rosmini 2. 149; Magenta 1. 171. The wedding was at Pavia (*R. I. S.* 16. 774), and Gian Galeazzo gave her a dowry of 100,000 florins (Corio).

[10] See p. 19.

believed, of a poisoned dish. Lodovico and his brother were removed to another prison, and she never saw him again,[11] since she died, as we have seen, in November, 1386.

Twice a papal dispensation had to be obtained to enable her to marry, the suitors being within the prohibited degrees of affinity.[12] The first of these was a violent madman.[13] The second, Lodovico, so it is expressly said, she married against her will.[14] In less than 19 years she was wedded and widowed three times, her marriage each time being from considerations of policy. She had no child by any of her husbands. Her father was scheming and ferocious; her uncle (also her father-in-law) was scheming and ferocious; her third husband was scheming and ferocious[15]; her second husband was ferocious, but unequal to successful scheming. The groans of the oppressed were to be heard on every side; battle, murder, and sudden death, were the incidents of daily life; all the cold and glittering splendor which marked the high days of her life was paid for with intolerable exactions, with coins wrung from the poor, with the tears and sighs of the overburdened. She herself was the plaything of politics, the tool of magnificent and unscrupulous tyrants, the most unfortunate of wives and widows; yet a modern historian can say[16]: 'She was a lady of sweet and honorable soul. It rarely happens that in one house are found three spirits so exquisite, so compassionate, and so swift to all goodness, as were Bianca of Savoy,[17] Isabella of France,[18] and Violante, between whom the slightest dissension never arose. They were noble souls in lovely bodies, and Heaven only knows what good they wrought in natures like those of Galeazzo and his son.'

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[11] So *R. I. S.* 16. 546. She died in Pavia, and was buried in S. Pietro Ciel d'Oro (*R. I. S.* 16. 546, 778).

[12] *R. I. S.* 23. 594; *M. H. P.* 3. 1340.

[13] 'Non bene sensatus' (*R. I. S.* 16. 541, cf. 546); 'qui sævis et difficilimis moribus erat' (*R. I. S.* 23. 597); 'un umor bestiale e quasi furioso' (Muratori 8. 383).

[14] *R. I. S.* 16. 546, 778.

[15] Lodovico and his two brothers, Carolo and Rodolfo, followed in the footsteps of their father. For the catalogue of their misdeeds, see *R. I. S.* 16. 799-800.

[16] Magenta 1. 176.

[17] See p. 48.

[18] See p. 49.

APPENDIXES

APPENDIX A

LIONEL'S NAME AND TITLE

Whence did Lionel derive his name, and his title of Duke of Clarence? Let us inquire into the name first, and then into the title.

As to the name Lionel, the following theories are suggested by Sandford, p. 221:

> This Lionel, named in Latin, Leonellus, Lionellus, and Leonatus, which signifie, a Lioncel, or Diminutive Lion, had this Appellation either from being the Off-spring of that Lion of England King Edward the Third (alluding to the Royal Arms he bare) whose Third Son he was, or to revive the British Name Llewellin, signifying Lion-like, being the same with Leominus or Leontius.

Here are two surmises: (1) Lionel means the son of Edward the Royal Lion; (2) Lionel is adapted from the Welsh Llewellyn. For the second of these there is nothing to be said. For the first, it is evident enough that Lionel is derived from 'lion,'[1] but there seems no sufficient ground for assuming that Edward III was, in 1338, before the battles of Sluys, Crécy, and Poitiers, known as the Lion,[2] in virtue of his personal prowess or the success of his arms, and as little for supposing that he derived this title from the animals on his shield, whether we call them lions or leopards.

These theories being rather unsatisfactory, let us ask ourselves whether we are bound to assume that the name was improvised for the occasion, or whether it already had a history. The French romance of *Lancelot,* in its prose form dating from about 1200,[3] has a hero, Lionel,[4] own cousin to Lancelot, the former being the son of Bohor (compare Tennyson's Sir Bors), and the latter of Bohor's brother, Ban. The two brothers had neighboring kingdoms near Saumur, in what was later Anjou,[5] which they held as vassals of King Aramont of Brittany. Aramont recognized Uther, and afterwards Arthur, as his suzerain. A certain Claudas of Bourges, declaring himself vassal of the King of Gaul, invaded the territory of Lancelot's father, who fled to England to implore the assistance of Arthur; but when he had departed, his castle was taken, and Ban soon after died. His brother, Bohor, survived Ban but a few days, and his kingdom, too, fell to the invader, Claudas. Lionel and his brother, named Bohor after his father, were left with their mother in Monteclair, the only castle that still remained of all that had belonged to their father; but even from this they were soon expelled by King Claudas.[6] When Lionel and Bohor had grown to boyhood, an attendant tells them that by one of the sons of Ban and (the elder) Bohor the adventurous period of Great Britain shall come to an end, at which Lionel grows first red, then pale, and bursts into tears. This, he explains, is because Claudas still holds his father's territories, whereupon Lancelot tells him that he will never want for lands if only he lack not courage.[7]

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[1] Four manuscripts (N, R, C, M) of Murimuth (p. 87) read *Leonem* for *Leonellum,* as the name given to the prince at his birth, he is called Leo in the *Cal. Pat. Rolls* for May 20, 1343, and Froissart (Kervyn 7. 246-7), in his account of the journey to Milan, uniformly calls him Lion(s), Lyon; cf. the Lyons of *Agravain* (*Romans* 5. 303), and the Lyon of the *Vœux du Héron* (below, p. 120).

[2] In the poems of Laurence Minot, Edward is more than once alluded to under the figure of a boar, and in the prophecies of John of Bridlington as a bull. See *Political Poems and Songs,* ed. Wright, Vol. 1.

[3] Gaston Paris, *Litt. Fr. au Moyen Âge,* 3d ed., p. 109 (*Romans* 4. 191, assigns to it a date 12, 20, or 30 years earlier). An earlier form was in

Eventually, as we are informed in the romance of *Agravain,* Lancelot, who has regained his hereditary dominions, bestows upon Lionel the kingdom of Gaul.[8]

Anglo-Norman, and was carried to Vienna by Gui de Morville, one of the hostages for Richard Cœur de Lion (before 1194).

[4] As does the Vulgate *Merlin* (ed. Sommer), and the Dutch *Lancelot,* ed. Jonckbloet, pp. 228-230. See Weston, *Legend of Sir Lancelot du Lac,* pp. 52, 135-6, 143, 201.

[5] Where the Angevin kings of England took the name of Plantagenets (Michelet 4. 191).

[6] See *Romans* 3. 3-21.

[7] *Romans* 3. 90-91; for other references to Lionel see pp. 27, 60-65, 67, 72, 84-89, 92-94, 110, 119, 127; 4. 1, 18-23, 45 ff., 76, 79, 144-5, 209 (dubbing of Lionel), 268-272, 320, 326, 330-332, 338-342; 5. 5-6, 118-120, 290-293, 295, 303, 314-5, 318-320, 323, 326, 334, 339, 351. (Cf. *Le Morte Darthur,* pp. 169, 170, 183-5, 190, 192, 196, 397, 585, 604, 612-3, 676-9, 682-6, 743-4, 818, 829, 855.) On p. 59 we are told: 'Lionel était le cœur d'enfant le plus démesuré que l'on pût voir; aussi Galehault, le vaillant seigneur des Iles foraines, le surnomma-t-il *Cœur sans frein* [cf. 4. 270], le jour qu'il fut armé chevalier.'

[8] *Romans* 5. 323; cf. *Le Morte Darthur,* pp. 829, 855.

There are two reasons for the association of this mythical Lionel with the king of beasts—the circumstances which gave him his name, and an exploit which he performed in the days of his knight-errantry. When Lionel was born, there was seen on his breast a red spot resembling a lion, with paws outstretched as if to embrace his neck.[9] The exploit, which Lionel craved for himself on the occasion of his dubbing as knight, consisted in the strangling of the first Libyan lion ever seen in Great Britain. It was led in, with a crown on its head, by a damsel who held it by a golden chain, and the reward of the emprise was to be the hand of the damsel's mistress, the most beautiful and richest lady in the world.[10] This exploit is of course to be disregarded in considering the reason why the Lionel of romance received his name.

But how can the Lionel of romance have influenced Edward III and Philippa in the bestowal of a name upon their third son? The answer to this involves a consideration of the circumstances and designs of Edward III in November, 1338, when Lionel was born. At that time one of the chief sources of England's wealth was wool, which was chiefly exported to Flanders, and there manufactured into cloth. The prosperity of both countries therefore depended upon a free and uninterrupted exchange of their products, which, during the earlier years of Edward's reign, was in danger of being prejudiced through French influence. To cultivate the friendship of the Low Countries, and to prevent the ascendency of the French in that quarter, was a policy which was almost forced upon Edward at this period. He had married Philippa, daughter of the Count of Hainaut, who was also Count of Holland and Zeeland, and Lord of Friesland; and this alliance was of great political advantage to him in his enterprises against France. The situation is summarily described by Coville[11]:

> Édouard III, suivant le conseil qui lui fut donné dans son Parlement, chercha de tous côtés des alliés sur le continent, jusqu'en

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[9] See the quotation from Lancelot in Madden's edition of *Sir Gawayne,* p. 313: 'Et le varlet avoit à nom Lyonnel pource que une grande merveille advint à son naistre. Car sy tost comme il yssit du ventre Helayne, sa mere, l'en trouva au meillieu de son pis une tasche vermeille en forme de lyon, et avoit l'enfant embrassé parmy le col, ainsi comme pour l'estrangler.'

[10] *Romans* 4. 272; 5. 290-293.

[11] Lavisse 4.^{1} 37 (cf. p. 35). See a fuller treatment in Michelet 4. 149-186.

> Norvège et en Espagne, mais surtout aux Pays-Bas. Il avait épousé une fille du comte de Hainaut, comte en même temps de Hollande et de Zélande et seigneur de Frise; il était devenu le beau-frère de l'empereur Louis de Bavière et du comte de Gueldre. En 1328, puis en 1330, il s'était assuré l'alliance du duc de Brabant, dont le duché commençait alors à prendre son grand essor industriel. Avec l'aide de la maison de Hainaut-Hollande, dont les domaines avaient une grande importance stratégique, Édouard espérait dominer tous les Pays-Bas. Il est vrai que Philippe VI, à partir de 1332, essaya de contrecarrer l'action d'Édouard dans cette région; il obligea le duc de Brabant à faire alliance avec lui et à marier son fils aîné à une fille de France, et en 1334 il acquit la seigneurie de Malines. Mais Edouard II reprit bientôt l'avantage aux Pays-Bas.

In October, 1337, Edward took the title of King of France, in order to quiet the scruples of the Flemish.[12] In July, 1338, he installed himself at Antwerp with Queen Philippa, and spent money lavishly, in hopes to gain more completely the friendship of the people.[13] Now it was during this sojourn in Antwerp that Philippa gave birth, on Nov. 29, 1338, to the son who was called Lionel of Antwerp—just as his brother, born two years later, was known as John of Gaunt (Ghent)—after Edward III had been present at a parliament in that city, at which he granted to the Flemish great commercial privileges, and bestowed upon them the wool staple and a large subsidy.[14]

Meanwhile, Edward was not only embroiled with the King of France on the grounds indicated above, but also because restitution had not been made of a part of Guyenne which had been seized by the French toward the close of his brother's reign. After this encroachment, Edward's vassals, whenever they were dissatisfied with his rule, were prone to appeal, over his head, to Philip VI, King of France.[15]

Here, then, we have a situation sufficiently analogous to that outlined at the beginning of *Lancelot*—the vassals of an English king despoiled, and their territory appropriated, by the vassals of a French king; while, looking to the future, as in the romance the whole of Gaul, and not merely an individual fief, falls under the sway of the son (still an infant when the story opens) of a dispossessed lord, so, it may be inferred, when chivalry has done its perfect work, will this infant possess a heritage in the fair lands of France. The analogy seems to fail in one point, it is true; for who is the Lancelot at whose hands Lionel is to receive his appanage? But we do not expect, in these smiling forecasts, the strictest correspondence in every detail. The Lionel of romance is brave even to foolhardiness[16]; and he is represented as consumed with grief at the wrong that has been done to his father and himself.[17] Would not a fond and ambitious father trust that his newborn son would thus conduct himself as he grew toward manhood?

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[12] Lavisse 4.^{1} 39; Michelet 4. 185.

[13] Lavisse 4.^{1} 43. Froissart thus describes his prodigality (Michelet 4. 179-180): 'Et n'épargnoient ni or ni argent, non plus que s'il leur plût des nues, et donnaient grands joyaux aux seigneurs et dames et demoiselles, pour acquérir la louange de ceux et de celles entre qui ils conversoient; et tant faisoient qu'ils l'avoient et étoient prisés de tous et de toutes, et mêmement du commun peuple à qui ils ne donnoient rien, pour le bel état qu'ils menoient.'

[14] Lavisse 4.^{1} 44-45.

[15] Lavisse 4.^{1} 35.

But what reason have we to suppose that the *Lancelot* would be thus familiarly known, or that a mere tissue of chivalric imagination would thus influence grave statesmen and ambitious warriors? As to the former, we have the testimony implied in the lines of Chaucer[18]:

> This storie is also trewe, I undertake,
> As is the book of Launcelot de Lake,
> That wommen holde in ful gret reverence.

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[16] *Romans* 3. 65.

[17] *Romans* 3. 61: 'Ne vaut-il pas mieux mourir à honneur que d'abandonner à d'autres son héritage?' As he and his brother come riding to the court of Claudas, in obedience to his summons, they are thus met: 'À leur approche, tous les gens du palais sortent pour les voir. On les regarde avec intérêt, on pleure, on prie Dieu de les rétablir un jour dans leurs honneurs. . . . Lionel avançait la tête haute, promenant fièrement sa vue de tous les côtés de la salle, comme jouvenceau de haut et noble parage' (3. 63-64). When he is about to be made knight, Arthur, who had been sojourning at Dinasdaron, gave rendezvous to his barons, for the feast of Pentecost, at his city of London, for he wished to dub young Lionel of Gannes knight in the presence of his whole court. 'Jamais il n'y eut une réunion si brillante de barons, de dames, et de demoiselles; on vint à Londres de toutes les villes non-seulement de la Grande-Bretagne, mais aussi de France, d'Allemagne, et de Lombardie' (4. 209).

[18] *Nun's Priest's Tale* 391-3 (B 4401-3). Cf. *Squire's Tale* 279 (F 287):

> No man but Launcelot, and he is deed.

In *Romans* 4. 371-3 attention is called to the fact that the *Lancelot* comprehends the *Galeotto* of Dante, mentioned in the episode of Paolo and

Significant, too, is the fact that on June 15, 1378, Luchino Novello Visconti, son of Luchino (Corio, p. 482; *R. I. S.* 16. 753; Giulini 5. 470), who was to sail early in July with Valentina, daughter of Bernabò, to marry Pierre II, King of Cyprus (see p. 109), wrote to obtain 'unum romanum loquentem de Tristano vel Lanzaloto, aut de aliqua alia pulcra et delectabili materia'; this was for pastime on the journey.[19] As to the latter, we should remind ourselves that such seriousness in dealing with the matter of romance was by no means unexampled. Roger of Hoveden, writing at the beginning of the 13th century, tells us that Richard Cœur de Lion, being in Sicily in the spring of 1191, 'gave Tancred that best of swords which the British call Caliburne [Excalibur], formerly the sword of Arthur, once the noble king of England.'[20] The *Itinerarium Regis Ricardi*, the chief European account of the Third Crusade, says of Richard[21]: 'His was the valor of Hector, the magnanimity of

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Francesca; that a subtitle for the *Decameron* was *Il Principe Galeotto* (cf. Hutton, p. 292, note); and that the *Amadis of Gaul* is largely indebted to the *Lancelot* (4. 371-3). One of Bernabò's sons (b. 1356) was called Leonello (*R. I. S.* 17. 500), or Lionello. Commenting upon this fact, Rajna (*Romania* 17. 184, note 8) thinks there is no doubt that this is a direct allusion to the romance, and adduces in support of his view the names of other children of Bernabò: Lancilotto, Sagromoro, Palamede (Palamidesse), Ettore (Astore), Galeotto; Isotta (Isolta), Ginevra (cf. Corio, p. 509; *R. I. S.* 17. 500). Even Galeazzo, according to Rajna (p. 182, note 2), is only another form of Galahad (which did not prevent the author of eight lines over the gateway of the Castello at Pavia from punning on the helmet there represented: 'Hac galea Galeaz castrum defendit et urbem'; so Jovius, in Grævius, p. 315).

[19] Jorga, *Philippe de Mézières*, p. 425, note 6; cf. *R. I. S.* 16. 771.

[20] Archer, *The Crusade of Richard I*, pp. 48-49. Archer remarks (p. 48, note): 'Though discarded by graver historians, such as William of Newburgh, the Arthurian stories soon worked their way deep down into the popular mind. In 1191, according to Ralph of Coggeshall, Arthur's tomb was discovered at Glastonbury with the inscription: "Here in the valley of Avallion lies buried the renowned king Arthur." The pervading influence of the legend may be seen in the fact that Arthur's name was given to the posthumous son of Geoffrey, the third son of Henry II.'

[21] Archer, p. 6, who adds: 'The allusions here are to various *chansons de geste* which seem to have been favorite reading with this writer.' Elsewhere the *Itinerarium* speaks of the 'period we still hear sung of in the "Gestes" about the famous victory of Boemund, of Tancred, Godfrey de Bouillon, and other noble chiefs of highest renown' (Archer, p. 283,

Achilles; he was no whit inferior to Alexander, or less than Roland in manhood.' The chronicler Jean le Bel, whom Froissart follows in the earlier part of his work, when referring to the attack on Aiguillon, near Agen, by the elder Earl of Derby[22] in 1346, compares it to the most famous sieges recounted in the stories of Alexander, Charlemagne, and Godfrey of Bouillon.[23]

Of the castle of Chalkis, in Eubœa, we are told[24]: 'The local legend made it the abode of fairies, the enchanted fortress where the Lady of the Lake had held Gauvain captive.' And of Cephalonia,[25] on the authority of Froissart: 'Fairies and nymphs inhabited this ancient realm of Odysseus.' Elsewhere I have written[26]: 'Mythical heroes are sometimes found in church-sculpture of the 12th century. Thus Arthur and other heroes of his cycle, recognizable by inscriptions, occur on the archivolt of the Peschiera doorway of the Cathedral of Modena (Venturi 3. 164; Michel 1.^{2} 698), while on the portal of San Zeno of Verona, Nicholas represented Roland, with his sword inscribed *Durindarda,* and Oliver opposite (Venturi 3. 196; Michel 1.^{2} 698). Even two episodes of the *Roman de Renard* occur on the lintel of the doorway of the Cathedral of Modena (Michel 1.^{2} 698).' In the *Vows of the Heron,*[27] John de Beaumont says that when knights are in taverns, drinking strong wines, they seem to themselves to be conquering Oliver and Roland, but that when they are on horseback, benumbed with cold, and with their enemies approaching, it is quite a different matter.[28] According to Jorga (pp. 24-25), Philippe de Mézières (1327-1405), the

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who says: 'The allusion here is to the great mediæval Chanson de Geste on the Siege of Antioch'). Again (Archer, p. 292): 'Out of all the "Gestes" of the ancients, and out of all the tradition of those who tell stories or write books from the most remote times, there never was a warrior of any creed who bore himself so nobly as King Richard did that day.' Finally, the *Itinerarium* refers to 'Richard, to whom Roland himself cannot be compared' (Archer, p. 311).

[22] See *Hist. Background,* pp. 176-7, 203, 219, 221-7, 237.

[23] Lavisse 4.^{1} 58.

[24] Miller, p. 366.

[25] *Ib.,* pp. 371-2.

[26] *The Date of the Ruthwell and Bewcastle Crosses,* p. 70, note 2.

[27] *Political Poems and Songs,* ed. Wright, 1. 21.

[28] Michelet (5. 81) speaks of the future Charles VI as having (ca. 1380) his imagination spoiled by the romances of chivalry.

celebrated advocate of untimely crusades, shows, especially in his epistle to Richard II, much familiarity with the mediæval accounts of the Trojan war, the twelve paladins, and the exploits of Alexander the Great, and compares Richard and Charles VI of France to Roland and Oliver, Charlemagne and Arthur.

Coming closer to Lionel himself, we have his great ancestor, Edward I, invoking the authority of legend against the claims of Scotland, as urged by Pope Boniface VIII. After relating the voyage of Brutus to Albion, where, after conquering and slaying the giants who possessed it, he renamed it Britain, and built the city of Trinovant, now called London, the great legislator continues[29]: 'Item Arturus, Rex Britonum, princeps famosissimus, Scotiam sibi rebellem subjecit, et pene totam gentem delevit: et postea quendam, nomine Anguselum, in Regem Scotiæ præfecit. Et cum postea idem Rex Arturus apud civitatem Legionum festum faceret celeberimum [*sic*], interfuerunt ibidem omnes Reges sibi subjecti, inter quos Anguselus, Rex Scotiæ, servitum [*sic*] pro regno Scotiæ exhibens debitum, gladium Regis Arturi detulit ante ipsum.' Nothing could more clearly show how, in this century, the facts which history records may, on occasion, grow out of, or receive justification from, the legends which poetry invents.

But even Lionel in person was, so to say, cradled in romance. In a French poem, *The Vows of the Heron*, probably written soon after 1340, Queen Philippa is represented as looking forward to the birth of the future Lionel, and as making his very existence contingent upon the fulfilment of her husband's vow to pass through Hainaut by way of Cambrai to the neighborhood of St. Quentin, carrying fire throughout the country, and making war upon King Philip if he dared the encounter.[30] The following synopsis of the relevant portion of the poem is given by its editor[31]:

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[29] Rymer, under May 7, 1301.

[30] Edward is represented as saying (cf. the remark of the Lionel of romance, above p. 114):

> Me cuide-il dont tolir mè terre et mon pays?

Edward swears by St. George and St. Denis, and refers to Hector, Achilles, Paris, and Alexander. See *op. cit. infra*, p. 7.

[31] *Political Poems and Songs*, ed. Wright, I. xii-xv.

> One day in the September of 1388, Robert Artois, who was at the court of King Edward at London, took his falcon, and went hunting on the banks of the river, till he caught a heron. Robert returned to the palace, where he went direct to the kitchen, and caused the bird to be immediately cooked and prepared for the table. Now that day King Edward sat at dinner with his courtiers, occupied only with thoughts of love and gallantry, and harboring only peaceful and indulgent feelings towards all his neighbors, not excepting the king of France. Robert of Artois suddenly presented himself in the hall, followed by three minstrels and two noble maidens, the latter of whom carried the heron ceremoniously laid between two dishes. Robert proclaimed that, as the heron had the reputation of being the most cowardly of birds, it was now destined for the greatest coward at the table, and that, he said, was King Edward, who submitted tamely to be deprived of the kingdom and crown of France, although he knew that they belonged to him by right. Having thus proclaimed his design, he presented the heron to the king, and, as was customary on such occasions, asked him to make a vow upon it. Edward, deeply stung by this reproach, made a vow that before the end of the year he would invade France with fire and sword, and that, if Philippe of Valois ventured to resist him, he would fight him, though he came with an army which was ten times the number of his own. Robert was overjoyed at the king's vow, and repeated to himself in undertones the hopes he had of revenging his own quarrel with King Philippe in the war which was about to commence; and then, after making his own vow, carrying the heron in the same ceremony, he proceeded to collect the vows of the other guests. . . . Robert of Artois presented himself in the last place before the queen of England. She first excused herself on the ground of being a married woman, but, on receiving permission from the king to do so, she uttered a vow which was not very remarkable for its feminine delicacy. . . . The heron was now carved, and shared among the guests; and soon afterwards the king made his preparations for his first campaign on the Continent. . . . The allusion to the captivity of the earl of Suffolk proves that it cannot have been composed before the year 1340.[32]

The following lines are those which refer more immediately to Lionel[33]:

> Adonc dist la roine: 'Je sais bien que piecha
> Que sui grosse d'enfant, que mon corps senti la,
> Encore n'a il gaires qu'en mon corps se tourna;
> Et je voue et prometh à Dieu qui me crea,

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[32] *The Vows of the Heron* is modeled upon the *Vœux du Paon* (1310-1315), for which see Gaston Paris, *Litt. Fr. au Moyen Âge,* 3d ed., p. 80.

[33] *Op. cit.*, pp. 23-25.

Qui nasqui de la vierge, que ses corps n'enpira,
Et qui morut en crois, on le crucifia,
Que jà li fruis de moi de mon corps n'istera,
Si m'en arés menée ou pais par delà,
Pour avanchier le veu que vo corps voüé a.
Et s'il en voelh isir, quant besoins n'en sera,
D'un grand coutel d'achier li miens corps s'ochira;
Serai m'asme perdue et li fruis perira.' . . .
Adonc, quant che fu fait, li rois s'apareilla,
Et fit garnir les nes, la roine i entra,
Et maint franc chevalier avecques lui mena.
De illoec en Anvers li rois ne s'arreta.
Quant outre sont venu, la dame delivra;
D'un biau fils gracieux la dame s'acouka,
Lyon d'Anvers ot non quant on le baptisa.
Ensi le franque dame le sien veu aquitta.[34]

The theory we have sketched concerning the source of Prince Lionel's name derives an added plausibility when considered in the light of his title, Duke of Clarence. It has usually been supposed that this title was derived from the possessions of Lionel's first wife, Elizabeth, at Clare in Suffolk,[35] her uncle having been Gilbert, Earl of Clare and Gloucester. Thus Sandford[36]: 'Duke of Clarence, as it were of the Country about the Town, Castle and Honour of Clare.'[37]

The matter is complicated by the existence in the Middle Ages of a town called Clarentza[38] (Glarentza), on the coast of Elis, nearly opposite the island of Zante (Corfu), from which some have supposed the title to have been derived. This opinion is thus combated by Leake[39]:

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[34] On April 16, 1358, the Dauphin Charles, afterwards Charles V, pays for the repair of a piece of tapestry, representing the vow of the heron (*panni lanei ad ymagines super voto Hardee*), which had been torn in his room by a favorite bear (Delachenal 1. 64).

[35] See pp. 91 ff.

[36] P. 222. Sandford says that Clarencieux king-at-arms, being provincial herald for the region south of the Trent, was named from this duchy.

[37] So *Dict. Nat. Biog.* 33. 336; Paris 4. 77; Hardyng, *Chronicle,* ed. Ellis, p. 333.

[38] Cf. Leake, *Travels in the Morea* 2. 173-4: 'Glaréntza, softened by the Italians into Chiarenza, once gave name to a Venetian duchy. . . . It is now only a desert harbor, where some rocks furnish a retreat for boats. There can be no doubt that Glaréntza is the ancient Cyllene.' Other particulars are given by Longnon (*Chronique de Morée,* pp. XCIX-CI): 'Clarentza was the port of Andravida, the capital of the principality of Achaia, and distant from it three leagues to the westward. The Franks created the new seaport (now filled up) on the site of the earlier St. Zacharia, and named it from the clear waters issuing from the fountain

> An unfounded opinion has long prevailed, and has been repeated by some of the latest travellers, that the name of the English dukedom of Clarence was derived from Glaréntza or Klaréntza, the modern name of *Cyllene.* But no royal or noble family of England is known to have possessed any territory in the *Peloponnesus,* and there can be no question, that Clarentia or Clarencia was the district of Clare, in Suffolk. The title was first given in 1362, by Edward III., to his third son Lionel, when the latter succeeded to the estates of Gilbert, earl of Clare and Gloucester, uncle to his wife, who was heiress also to her father, William de Burg, earl of Ulster. On Lionel's death, the title became extinct for want of heirs, and was thrice renewed with the same result: in 1411, by King Henry IV., in favour of his second son, Thomas Plantagenet; in 1461, by King Edward IV., in favour of his brother, George Plantagenet; and in 1789, by King George III., in favour of his third son, William Henry. Κλαρέντζα, Γλάρεντζα, or Γλαράντζα, is a name found in other parts of Greece, and appears to be derived from the Romaic Γλάρος, a water-fowl so called. It is possible that this error as to the title of Clarence may have been partly caused by the identity of the Latin form of the name of the two places, although so widely distant from one another.

The views of Leake have been traversed by Sir Rennell Rodd[40]:

> It has been maintained that after the marriage of Florence of Hainault with Isabella Villehardouin, the family of the counts of Hainault took a title from the Achaian city of Clarenza, and that through Philippa of Hainault, the wife of Edward III., it was revived in favour of her son Lionel.

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of Cyllene. It was the place of disembarkation for reinforcements arriving from France and the kingdom of Naples, and destined for the Morea. It was, too, the resort of foreign merchants, especially the Venetians, and a place of considerable commerce; and its citizens formed a financial aristocracy. The local French fleet was under the control of an admiral, and the money coined here was esteemed throughout the Orient, as the weights and measures of Clarentza were recognized as standard in all Romania.' See also Leake, *Peloponnesiaca,* pp. 210-211; Rodd 1. 110, 141, 173-5, 266; 2. 3, 18, 30, 34; Miller, pp. 267-8, 272, 289, and Index s. v. Glarentza; Boccaccio, *Decameron* 2. 7; Ptolemy, *Geographia,* ed. Noble, 3. 16. 6 (where later manuscripts record that Cyllene was subsequently known as Klaréntza).

[39] *Peloponnesiaca,* p. 212.

[40] 2. 275-6.

> Buchon, Hopf, and others have accepted the popular tradition. Colonel Leake, on the other hand, throws doubt upon it, maintaining that the English title of Clarence was derived from the district of Clare in Suffolk, and was borne by Prince Lionel on his succeeding to the estate of Gilbert, Earl of Clare and Gloucester, uncle to his wife (*Peloponnesiaca*, p. 212). Leake found the name Γλάρεντζα or Γλάραντζα existing in other parts of Greece, and derives it from the Romaic name of a waterfowl, Γλάρος. The tradition, however, which connects an English prince with the adventurers of the thirteenth century in the Morea has a fascination which one is reluctant to abandon, and it is conceivable that the name had a double significance as bestowed on the son of Philippa of Hainault. . . .
>
> Lionel, Duke of Clarence, died in 1369. If the title had been a new one created especially for this prince, and derived from Clare in Suffolk, it might be contended that a contemporary writer would hardly have chosen it to give to a knight of King Arthur's court. On the other hand, the legends which had gathered round the conquest of Morea and the acquisition of principalities in the Levant would more readily justify the association with the round table of a name derived from the crusading epoch which developed the spirit of adventure and chivalry crystallized in the Arthurian romance.

What shall we say to these opposing views? Was Lionel's title derived from Clare in Suffolk, or from Clarentza in the Peloponnesus? Those who advocate the latter opinion argue as follows[41]: The title to Clarentza descended from William of Villehardouin (1245?-1278) to his daughter Isabella[42] (1289-1307), and from her to her daughter by Florence (Florent) of Hainaut, Mahault[43] (1313-8), from whom it passed (conjecturally) to Philippa[44] of Hainaut, queen of Edward III, who transmitted it to Lionel.[45]

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[41] See Brockhaus, *Konv.-Lexikon*, 14th ed., 10. 390-391; cf. Meyer, *Grosses Konv.-Lexikon*, 6th ed., 11. 94; *Nouv. Larousse Illustré* s. vv. Clarence, Clarentza; *Grande Encyc.* 11. 541-2; 1. 369, 370.

[42] Cf. Rodd 2. 2-3; Miller, pp. 205-6.

[43] Rodd 2. 19, 33, 143 ff., 148, 154-5, and Appendix III; Miller, pp. 190, 206, 252, 256-8.

[44] As Lionel named his daughter (and only child) Philippa, it may be surmised that there was a peculiar attachment between him and his mother. Lionel's daughter gave the same name to a daughter of her own (b. Nov. 21, 1375). Her next child, Edmund (b. Nov. 9, 1376), named a son Lionel.

[45] It is curious how a *nominal* Prince of Achaia was summoned by Lionel to appear before his tribunal in Milan, six days before his marriage. See p. 90.

Those who take the trouble to follow the career of Mahault of Hainaut to the end will see that it was only a barren title that she had to bestow, and that, such as it was, it could not have passed by direct and valid descent to Lionel of Antwerp. How far it was connoted, as a mere reminiscence, in the naming of the young prince, is another matter.

But even granting the reminiscence, we have still to inquire how a town in Greece came to have such a manifestly occidental name as Clarentza (for the derivation suggested by Leake evidently does not account for more than the first syllable, and is problematical enough for that). Here we are assisted by a piece of collateral evidence. The citadel of Clarentza, built in the first quarter of the 13th century,[46] a work which it required three years to construct,[47] was named Clairmont, a word which, by a transposition of its syllables, becomes Montclair, which at once reminds us of the castle of Monteclair where the mother of the mythical Lionel had taken refuge with her two sons when their country was ravaged by Claudas.[48] It need not surprise us, then, if the name of Clarentza recalls a personage of the *Roman de Lancelot*. Such a personage there was in the Duke of Clarence to whom we are introduced in the *Lancelot*, where, after the banquet on the occasion of Lionel's initiation into knighthood, four renowned knights of the Table Round take their way to the forest of Varannes, not far from the Thames, these four being Gawain, Ywain, Lancelot, and Galeschin,[49] Duke of Clarence, the son of Tradelinan, King of North Wales, brother of Dodinel[50] le Sauvage, nephew of King Arthur, and own cousin to Gawain.[51] A knight of such noble lineage, thus accompanied and thus distinguished, might well become famous among the chivalrous readers of romance, and thus lend his name to a principality founded by invaders from France.[52]

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[46] Rodd I. 132-3, 137; Miller, pp. 87-88.

[47] Miller, p. 87. See the descriptions in Rodd I. 135-7, 174-5 (with plan).

[48] *Romans* 3. 35, 37; cf. p. 114, above.

[49] Malory spells the name in a variety of ways, none closely resembling this: Chalannce, Chalenge, Challyns, Chaleyns; cf. *Le Morte Darthur*, pp. 484-5, 491, 766, 790.

[50] Madden describes the Duke of Clarence (*Sir Gawayne*, p. 313) as 'son of Neutres, King of Garlot, by a sister of Arthur, and *cousin* of Dodinel. The duchy was given to him by Arthur, after his marriage with Guenever. The author of Merlin says of him, "Cest enfant fut le meilleur chevalier de deux centz cinquante chevaliers qui furent de la Table Ronde."'

The Duke of Clarence and Lionel, as well as Lancelot, Bors, Bedivere, and the brother of the Duke of Clarence, Dodinel le Sauvage, are associated in *Gawain and the Green Knight*[53] 552-4:

> Syr Doddinaval de Savage, þe duk of Clarence,
> Launcelot, and Lyonel, and Lucan þe gode,
> Syr Bors and Sir Bydver.

This, and the quotation from Chaucer with respect to the *Lancelot,*[54] may avail to show that, in the last half of the 14th century, the romance was well known in England, as we may infer that it was in the Morea in the first quarter of the 13th century. And these, together with the analogies adduced above,[55] will perhaps serve to establish the presumption that both the name and the title of King Edward III's son were derived from the *Lancelot,* at a period when the Table Round was strikingly recalled to men's minds by the establishment of the Order of the Garter (1348, or somewhat earlier).

But where, after all, was the original duchy of Clarence? Perhaps in faerie, or in a country sufficiently near to it; for the romancer,[56] apropos of Lancelot's battle-cry, 'Clarence!

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[51] *Romans* 4. 210. For Galeschin's adventures, see 4. 213-246, 293, 297, 309-311, 313, 328. He is described as short and stocky, but bold, alert, and of marvelous prowess.

[52] Cf. Rodd 1. 176: 'By a strange irony of fate a Lombard marquis was warden of the pass of Thermopylæ, a knight of Flanders was lord in seven-gated Thebes, and a Venetian adventurer ruled over the Cyclades.' Miller (p. 87) quotes from the Venetian, Sanudo: 'He possessed a broad domain and great riches; he was wont to send his most confidential advisers from time to time to the courts of his vassals, to see how they lived and how they treated their subjects. At his own court he constantly maintained eighty knights with golden spurs, to whom he gave all that they required, besides their pay; so knights came from France, from Burgundy, and, above all, from Champagne, to follow him. Some came to amuse themselves, others to pay their debts, others because of crimes which they had committed at home.'

[53] Ascribed to about the time when Lionel received knighthood.

[54] Above, p. 117.

[55] Pp. 115-7.

[56] *Romans* 4. 76.

l'enseigne au roi Artus,' remarks: 'Clarence est une cité de Norgalles, grande et plantureuse, où jadis avait résidé le roi Taulas, aïeul d'Uterpendragon. De là le cri que ses descendants avaient conservé.'

The mythical Clarence of a legendary North Wales, the Clarentza of a chivalrous emprise in Greece, the Clare of Suffolk—are all these blended, then, in Lionel's title? However that may be, it would seem that, had it not been for the *Roman de Lancelot,* we should have known Chaucer's earliest patron neither as Lionel nor as the Duke of Clarence.[57]

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[57] See *Hist. Background,* p. 185.

APPENDIX B

CHAUCER'S ALAUNTS

In his description of Lycurgus, King of Thrace,[1] Chaucer tells us (*K. T.* 1290-94):

> Aboute his char ther wenten whyte alaunts,
> Twenty and mo, as grete as any steer,
> To hunten at the leoun or the deer,
> And folwed him, with mosel faste ybounde,
> Colers of gold, and torets fyled rounde.

What were these alaunts, and whence did Chaucer derive his acquaintance with them?

The first extended account that we have of this species of dog is contained in the treatise on hunting written by Alfonso XI of Spain, or under his direction, between 1342-50[2]:

> Las fechuras que debe haber el alano para ser fermoso son estas; que haya la cabeza de talle de congrio, et bien cuadrada, et bien seca, et la nariz blanca, et bien abierto de boca; et las presas grandes, et los ojos bien pequeños, et que cate bien á la nariz; et las orejas bien enfiestas, et bien redondas; pero que esto de las orejas todo vá en el que lo faña en facergelas bien tajadas, ó mal; et que haya el cuello luengo; pero que se sigua bien, que non sea muy grueso, nin muy delgado; et que haya los pechos bien abiertos, et los brazos que los haya bien enfiestos, et non delgados, et la cuartiella pequeña, et las manos redondas, et altas, et el arca colgada et grande, et que non se le parezcan las tetas; et que haya el lomo bueno, et non cargado en las caderas, et que se le parescan á mala vez los huesos del espinazo; et la cola que sea mas contra gruesa que contra delgada, et que sea bien espigada, et que la traiga bien; et las corvas que las haya bien anchas, et bien arregazadas, et los piés que se siguan con las manos, et que sea de buen cabello, et blando, et de cuerpo que non sea muy grande sin razon. Et el alano que estas fechuras hobiere, será fermoso, et de razon debe seer tomador.
>
> La alana que sea mas aguda de rostro, et que non haya tamaña boca como el alano; et que haya los ojos pequeños, et un poquiello

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[1] The home of Mars (cf. *K. T.* 114-6); see Homer, *Il.* 13. 301; *Od.* 8. 361; Sophocles, *Antig.* 970; Virgil, *Æn.* 12. 331 (cf. 3. 13); Statius, *Theb.* 7. 6 ff., 35 ff.; etc. Chaucer assigns to Thrace the hunting of the lion and the bear, where Statius (*Theb.* 4. 494-5) refers the hunting of the lion to Morocco (cf. Boccaccio, *Tes.* 7. 106, 119).

[2] Gutierrez de la Vega (see below), pp. XLII-XLIII. For Alfonso at Algeciras, see *Hist. Background,* pp. 217 ff.

longuetes, pero que cate á la nariz, et que sea mas luenga de costados, et que haya mayores caderas, et que non sea tan abierta de pechos, et en todo lo al que sea de las fechuras del alano.

Las mas finas colores que Nos fallamos de los alanos, et de las alanas son los blancos, et los grises escuros, et los prietos, et aun blancos manchados, en tal que hayan dos, ó tres manchas, et que sean grises, ó prietas, et que las hayan en la cabeza, ó sobre la cola; pero tambien de sabuesos como de alanos por non ser muy lindos de fechuras, nin de colores, acaesce á las veces que hay algunos que son buenos de bondat, empero mas de razon es comunalmente de los que fueren lindos, et hobieren buenas fechuras, et buenas colores salir mas dellos buenos que non de los otros. Et á dó se ayunta la bondat et la fermosura, et ser lindo, es la bondat doblada.[8]

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[8] *Libro de la Monteria*, ed. Gutierrez de la Vega, pp. 115-8 (chap. 41). Another passage is (pp. 6-7):

> 'Otrosí los alanos es cierta cosa que non toman por fambre nin por premia salvo por naturaleza derecha, que les dió Dios, et ardideza de corazon sobre todas las animalias. Et aun los muy lindos dellos con lealtad non tan solamiente tomará el alano lindo cualquier venado á quel pongan; mas aun sil mandare tomar aquel á qui conosciere, á un home armado, tomarlo ha. Et probado fué muchas veces que muchos alanos ayudaron á los que los criaban contra sus enemigos et se defendieron dellos por ayuda de alanos. Et es verdat que tambien de sabuesos como de alanos, que si non fuese porque les faria mal el grant afan sobrel comer, que toda cosa que á ellos pertenesce de facer, farian mejor después que gobernados que antes. Et asi se prueba que todo lo que facen en su oficio, que lo facen por naturaleza de omecillio que puso Dios entrellos et los venados, et por talante que han de lo facer, et non por fambre, nin por otra premia ninguna.'

And still another has reference to the breeding of the alaunt (pp. 110-1; chap. 39):

> 'Para haber buenos alanos, deben facer desta guisa. Cuando tovieren muy buen alano et bien lindo, et fermoso, et bien tomador, debel catar una alana que sea desa condicion mesma, et apartarlos ambos de la guisa mesma que de suso dice que aparten á los sabuesos, et facer á ella esa mesma guarda. Et de que pariere, dejarle dos, ó tres fijos, á lo mas, et los otros darlos á criar á otras alanas, ó á lebreras, ó á mastinas las mas lindas que fallaren. Et desde que hobieren medio año, criarlos sueltos, et non usarlos atar, porque se facen los brazos tuertos; pero guardarlos de andar lo mas que pudieren mientre son tiernos; et requerirlos con leche, porque los trae sanos et senciellos. Et cuando hobieren medio año, despuntarles bien las orejas, porque desde que son fañados, traenlas siempre mejor et mas en fiestas. Et criarlos desta guisa fasta que hayan un año. Et de un año adelante traerlos siempre consigo en palacio, para

It might be inferred from the foregoing that the home of the alaunt was in Spain, and this view is confirmed by the fact that in the time of Gaston de Foix (see below) it was proverbial that greyhounds came from Brittany, and alaunts and bird-dogs from Spain[4]; moreover, we are told by Commines that Louis XI (1461-83) had alaunts brought from Spain.[5]

As Foix is so near to the Pyrenees, it is not surprising that the next authority on the alaunts is Gaston de Foix (1331-1391), surnamed Phœbus,[6] son of the Gaston II who fought at Algeciras in 1343.[7] That Gaston Phœbus was fond of the chase may be deduced from the fact that he kept 1600 hounds.[8] The full title of his famous book, written between 1387 and 1391, is *Déduits de la Chasse des Bestes Sauvaiges et des Oiseaulx de Proye.* It has been published by Joseph Lavallée (Paris, 1854), as *La Chasse de Gaston Phébus.*[9] The part that concerns the alaunt here follows, with certain changes in punctuation (pp. 100-102):

> Alanz est une nature et manière de chiens[10]; et les uns sont que on appelle alanz gentilz, les autres sont que on appelle alans veautres. Les autres sont alans de boucherie.
>
> Les alans gentilz si doivent estre fez et taillez droitement comme un levrier de toutes choses fors de la teste, qui doit estre grosse et courte.[11] Et combien qu'il en y ait de chescun poill, le droit bon poil de alant, et qui plus est commun, si doit estre blanc, avec aucune

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acostumbrarlos, et emponerlos en el tomar; pero guardarlos de grand afan, fasta que hayan dos años, ó año et medio á lo menos, que non lo lleven á monte.'

Cf. Leighton (p. 86) on the breeding of the Great Dane.

[4] De Noirmont 2. 294.

[5] *Ib.* I. 112.

[6] In 1373, according to Froissart, Gaston sent to the Duke of Anjou four coursers and two alaunts of Spain, fair and good (tr. Berners, reprint of 1812, Vol. 2, chap. 24). Froissart himself in 1388 took to Gaston from England four greyhounds—Tristan, Hector, Bren, and Rolland (Baillie-Grohman, p. xxx).

[7] *Hist. Background,* pp. 219, 223, 225-6.

[8] Baillie-Grohman, p. xxx.

[9] There is a cheap reprint, Paris, 1897.

[10] Cotgrave (*Dictionarie,* 1632) describes the Allan as 'a kind of big, strong, thicke headed, and short snowted dog, the brood whereof came first out of Albania.' To Florio it is simply 'a mastive dog.'

[11] Cotgrave says it is 'like a Grayhound in all properties and parts, his thicke and short head excepted.'

tache noire environ l'oreille; les yeulz bien petiz et blans, et les narrines blanches; les oreilles droites et agusiées, et aussi les y afaite[12] l'en.

Alan faut mieulz acoustumer que nulle autre beste, quar il est mieulz taillé, et plus fort pour fere mal, que nulle autre beste; et aussi de leur nature les alans sont voulentiers estourdiz, et si n'ont mie si bon sens comme moult d'autres chiens ont: quar se on court un cheval ils le prennent voulentiers, et vont aux buefz, ou brebis, ou pourcialx, ou à autre bestiaill, ou aux gens, ou à autres chiens (quar j'ay veu alant qui tuait son maistre); et en toutes guises alans sont mal gracieux et mal entechiez, et plus foulz et estourdiz que autre manière de chiens. Et oncques je n'en vi trois bien entechiez et bien bons; quar bon alant doit courre si tost comme un levrier, et ce à quoy il ataint il doit metre la dent; et ce doit estre sans leissier, quart un alant de sa nature tient plus fort sa morsure que ne feroient trois lévriers—les meilleurs que on puisse trouver. Et pour ce est ce le meilleur chien que on puisse tenir pour prendre toutes bestes à tenir fort. Et quant il est bien duit et parfaictement bon, je tiens que c'est le souverain de tous les autres chiens; mes pou en trouve en de parfet.

Bon alant doit amer son maistre, et suyvir et luy aidier en tous cas, et fere ce qui li commendera, queuque chose que ce soit. Bon alant doit aller tost, et estre hardy à prendre toute beste sans marchander, et tenir fort sans leissier, et bien aconditioné, et bien à commandement de son maistre; et quant il est tel, je tiens, comme j'ay dit, que c'est le meilleur chien qui puisse estre pour prendre toute beste.

L'autre nature d'alans veautres si sont auques taillez comme leide taille de levrier; mes ils ont grosses testes, grosses levres, et granz oreilles[13]; et de cez si s'aide l'en très bien de chassier les ours et

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[12] From Spanish *afeytar,* crop.

[13] Cotgrave defines it as a 'great & ougly curre of that kind (having a big head, hanging lips, and slowching eares), kept onely to hunt the Beare and wild Boare.' Elsewhere (under Vaultre) he characterizes it as 'a mungrell betweene a hound and a mastife, or of a size between the Allan and great countrie curre; fit for the chase or hunting of wild Beares and Boares.' Godefroy (*Dict. de l'Ancien Français,* s. v. Veltre) defines it as a 'sorte de chien employé surtout pour la chasse de l'ours et du sanglier.' De Noirmont (2. 297) identifies this with the Spanish *alano* described below by Alonso Martinez de Espinar (*Arte de Ballesteria y Monteria,* 1644), the ancestor of the Cuban dogs, and of those which are trained by the Spaniards to fight with bulls: 'He is large, his limbs strong, his muzzle blunt, his forehead straight and broad, his eyes round and bloodshot, his aspect terrible, and his neck short and thick; his strength is such that he can conquer an animal as valiant and ferocious as the bull.'

For bear-hunting in the Pyrenees and in Spain, see De Noirmont 2. 481-4.

les porcs, quar ilz tiennent de leur nature fort; mes ils sont pesans et lez, et s'ils muerent d'un sanglier ou d'un ours, ce n'est mie trop grande perte. Et meslez avec levriers qui puissent, sont bons, quar, quant ils ateinhent, ils lient la beste et la tiennent tout quoy; mes par eulx mesmes ils ne l'ateindroient jà, se leuvriers ne métoient la beste en destri. Donc tout homme qui vuelt hanter la chasse des ours et des porcs doit avoir et levriers et alanz veautres ou de boucherie (et mastins si n'en puelt avoir des autres), quar fort tiennent, comme j'ai dit, plus que lévriers.

L'autre nature d'alans de boucherie sont tels que vous pouvez veoir tousjours ès bonnes villes, les quieux les bouchers tiennent pour leur aidier à mener les bestaillz qu'ils achatent hors des bonnes villes; quar si un buef eschapoit du bouchier qui le maine, son chien le va prendre et arrester[14] jusques tant que son mestre soit venu, et l'aide à ramener à la ville. Et sont de pou de despenz, qu'ilz menjent les ordures des boucheries; et aussi gardent ilz l'ostel de le mestre, et sont bons pour la chasse des ours ou des sangliers, ou soit avec levriers au titre,[15] ou soit avec chiens courans aux abois dedenz les fourz; quar quant un sanglier est en 1 fort païs, jà de tout le jour par aventure ne le vuideroit pour les chiens courrans. Et quant on gete cieu mastinaille, ou ilz le prennent en my le fors, et le font tuer à aucun homme, ou ilz lui font vuider le païs, qu'il ne demourra gueres longuement aux abois. Et aussi sont ilz bons pour veautrer de nuiz, si comme je diray quant parleray du veneur.

As the original is somewhat repetitious and confused, a condensed summary, with a redistribution of the matter, is here presented:

There are three species of alaunts—gentle alaunts, veltres, and butchers' alaunts, the last being the least esteemed.

Nearly all alaunts have bad dispositions, and are harebrained and selfwilled. No other dog can equal an exceptional alaunt, if perfectly trained. A thoroughly good alaunt must be as fleet as a greyhound, fearless, fond of his master and close at call, obedient, prompt in seizing his prey, and tenacious of his hold. No dog is so well built, and none so strong to do harm; neither is any so ready to attack—whether it be horse, ox, sheep, hog, a human being, or another dog. Therefore, since an alaunt is as strong in the jaws as any three greyhounds, and has on occasion been known to kill his own master, it is evident that he needs the most thorough training. Even then,

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[14] Cotgrave says it is 'like our Mastive, and serves Butchers to bring in fierce oxen, and to keepe their stalls.'

[15] The *titre* was an arrangement for so surrounding the game as to leave but one passage open, on issuing through which the animals were attacked by relays of hounds.

> a man must have had a very large experience of dogs if he has seen three first-class alaunts in all his life.
>
> The gentle alaunt is built exactly like a greyhound, except that he has a short, thick head.
>
> The veltre is formed like an ill-shaped greyhound, only with a big head.
>
> The butchers' alaunt is not particularly described as to his appearance.
>
> The gentle alaunt has straight and pointed ears, rendered sharper by cropping. The veltre has large ears and large lips.
>
> The gentle alaunt is preferably white, touched with black about the ears. Its nostrils are white, and its eyes white and very small.
>
> The veltre serves a good purpose in the chase of the bear and wild boar, but is too heavy and slow for the pursuit, and therefore needs to be supplemented by the greyhound. The greyhounds come up with the quarry, and keep it at bay till the veltres seize it. In default of veltres, butchers' alaunts may be used for this purpose.
>
> The chief use of butchers' alaunts is to capture and hold an animal, such as an ox, that is running away; they are also employed as watchdogs, and as a substitute for veltres in the chase.

In the book called *The Master of Game,* written by Edward, second Duke of York, probably between 1406 and 1413,[16] the chapter on the alaunts is translated, with minor variations, from that by Gaston de Foix. This chapter[17] is as follows,[18] the chief variations being indicated by italics, the punctuation somewhat improved, and an occasional emendation suggested in square brackets:

> Alaunt is a maner and nature of houndes, and þe *good* alauntz ben þe [þo?] which men clepyn alauntz gentil; other þer byn þat men clepyn alauntz veutreres. Oþer byn alauntz of þe bocherie. Thei þat ben gentile shuld be made and shape as a greyhounde, evyn of alle þinges[19] sauf of þe heved, þe whiche shuld be greet and short; and þouȝe ther [byn] alauntes of alle hewes, þe verrey hue of þe good alauntz þ^t is moost comon shuld be white, wiþ a blak spott about þe eerys, smale [and white] eyne, and white stondyng eres and sharpe above.
>
> Men shuld teche alauntz bettir, and to be of better custumes, þan eny oþer beestis, for he is bettir shape, and strenger for to do harme, þan eny oþer beest. Also comonly alauntz byn stordy[20] of here owyn

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[16] Ed. Baillie-Grohman, London, 1904. See Wells, pp. 427, 833.

[17] Chap. 16.

[18] *Op. cit.,* pp. 64-5.

[19] Equally in all respects.

[20] Stubborn, headstrong, dogged, unruly; cf. 'sturdy beggars.' The alaunt has been compared to the Great Dane (see p. 136), of which Leigh-

nature, and have not so good witte as many oþer houndes have; for if a man prik an hors, þe alaunt wil gladly renne and bite þe hors; also þei renne at oxen, and at sheepe, at swyne, and to alle oþer beestis, or to men, or to oþer houndes, for *men han* seyn alauntz sle here maystire. And in alle maner wise alauntz byn july felle, and evel undirstondyng, and more foolish and more sturdy þan eny oþer maner of houndes. And *men seyn* never þre wel condicions [condiciond] and good, for a good alaunt shuld renne also fast as a greihounde, and eny beest þat he myȝt come to he shuld hold wiþ his sesours and nouȝt leve it, for an alaunt of his nature holdeth faster his biteng þan should iii greihoundes þe best þat eny man may fynde, and þerfore it is þe best hounde for to hold and for [to] nyme al maner beestis, and hold myȝtely. And whan he is wel condiciond and perfitly [good], *men* hold þat he is good amonge al oþer houndes; but men fynden but fewe þat doon [*rather,* byn] perfite. A good alaunt shuld love his maistire, and folowe hym, and helpe hym in alle cace; and what þing his maister wold hym comaunde he shuld do. A good alaunt shuld goo fast, and be hardy to nyme al maner beestis wiþout turnyng, and hold fast and not leve it, and wel condiciond, and wel at his maistris comaundement; and when he is soche, *men* hold, as I have saide, þat he is oon þe good[21] hounde þt may be for to take al maner beestis.

That oþer [65] nature of alauntz is clepid veutreres. Almost þei bene shapon as a greyhounde of ful shap, [but] þei han grete hedes, and greet lippes, and greet eeris; and wiþ such men helpeþ hem[22] at þe *baityng of a boole* and atte huntygne of a wilde boor. Þei holde fast of here nature, but þei byn [heavy] and foule, and [ȝif thei] ben slayn wiþ wilde boor or wiþ þe bulle, and [*om.*] it is not ful grete losse. And[23] wher þei may overtake a beest, þei biten and holden hure stille; but by hem self þei shuld nevyr holde þe beest, but ȝif þe greihoundes were withe hem, for to make þe beest tarye.[23]

That oþer nature, of alauntz of þe bocher[i]e, is soch as ye may alle day see in good times [tounes], *þat byn called greet bochers houndis,* þe which bouchers holde[24] for to helpe hem to bryng here beestis þat þei byn[25] in þe cuntre; for, ȝif an oxe escapid from þe boochers þat leden hym, his houndes wold go take hym, and holde hym to[26] his master were come, and shuld helpe hym to benynge [brynge] hym

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ton says (p. 86): 'With almost the strength of a tiger he combines the excitability of a terrier, and no doubt a badly trained Great Dane is a very dangerous animal.'

[21] The best.

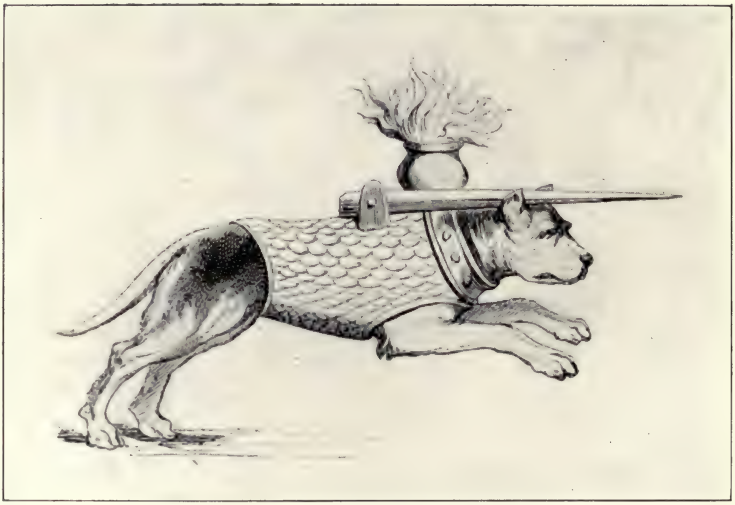
[22] Themselves.

[23] A portion untranslated.

[24] Keep.

[25] Buy.

[26] Until.



The Alaunt as a War-Dog.

> agayn to þe toun. Þei byn of litel cost, for þei etyn þe foule þinges in þe boochiers rowe, and also þei kepen her maisters hous. Þei byn good *for þe batyng of þe bole* and huntyng of þe wild boore, whedir it be with greihoundis at trustre[27] or with rennyng houndis at abbay wiþ inne þe coverte; for whan a wilde boor is wiþinne a strong hatte of wood, peraventure of [*om.*] alle þe day he wil not voide þennys for þe rennyng houndes. And whan men lat soche mestifis renne at þe boor, þei taken hym in þe thik spoyes[28] and make some men slee hym, or þei make hym come out of þe strenght, þat he ne shal abide long at abaies.[28]

The following account of the alaunt is given by Baillie-Grohman (pp. 115-6):

> A strong ferocious dog,[29] supposed to have been brought to Western Europe by a Caucasian tribe called Alains or Alani.[30] This tribe invaded Gaul in the fourth century, settling there awhile, and then continued their wanderings and overran Spain. It is from this country that the best *alans* were obtained during the Middle Ages, and dogs that are used for bull- or bear-baiting there are still called *Alanos.*[31] Gaston de Foix, living on the borders of this country, was in the best position to obtain such dogs, and to know all about them. His description, which we have here, tallies exactly with that written in a Spanish book on hunting of the fourteenth century. This book, *Libro de la Monteria,* was written by Alphonso XI. Both Gaston and this Spanish king say that the body of the *Alaunt* was like that of a heavy greyhound, their eyes were small, they were square in the jaw, and that their ears were trimmed and pointed to make them look alert. The tail was rather large than small. They were of three colours, white, grey, and blackish, but that white with black markings near the head and above the tail were the best liked. Alauntes were used as war dogs,[32] and it was said that when once they seized their

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[27] Tryst.

[28] Coppice, thicket.

[29] De Noirmont (2. 538) divides hunting-dogs into three classes: (1) Powerful dogs (*chiens de force*), including the wolfhound, mastiff, and bulldog, as well as the alaunt; (2) Greyhounds; (3) Running hounds; (4) Bird-dogs.

[30] Diez (*Etym. Wbch.* 1. 12) thinks that alaunt means Albanian dog.

[31] Similarly in the Spanish dictionary of Barcia, under the word Alano (I translate): 'The alaunt was so named because he was very fierce and bloodthirsty, like the barbarians who invaded Spain at the beginning of the fifth century. Hence this species of dog was employed in the hunting of wild boars.' Cf. Leighton, p. 511.

[32] I insert a picture taken from the *Magasin Pittoresque* 23 (1855). 221, which reproduced it from the *Tractatus de Re Militari et de Machinis Bellicis* (1330-40) of Paul Savetinus Ducensis, a manuscript of the

prey they would not loose their hold. An Italian MS. of the fourteenth century says that *Alans* that are to be set on cavalry should be trained by their masters to be ferocious and "biting" (Ducange; Wynn, "Brit. Mastiff," p. 48; De Noir. ii. 398 [298]).

As to the general appearance of the *alan gentil,* De Noirmont[33] compares it to the Great Dane or German boarhound, to which he assigns a height of 30 to 32, or, exceptionally, 34 inches; but Chance, the Great Dane whose picture is here reproduced, 'stood fully 35 inches at the shoulder, and was perhaps the tallest dog of any breed, and at any time, whose measurements have been recorded,'[34] Vendetta having been 32½ inches in height.

The picture of alaunts reproduced below is from an illumination in the beautiful manuscript of Gaston de Foix's work which was executed in the early years of the fifteenth century. The reproduction has been made from Baillie-Grohman, Pl. XVIII, opposite p. 64 (with which may be compared Pl. XIV, opposite p. 42, lower left hand; Pl. XXVIII, opposite p. 80, upper left hand and lower right hand; Pl. XLVIII, opposite p. 240, bottom).

De Noirmont[35] says the alaunts always wore a muzzle, except in the chase.

The alaunt has not often figured in literature. One of the most notable occurrences of the word is in the *Orlando Furioso* (46. 138):

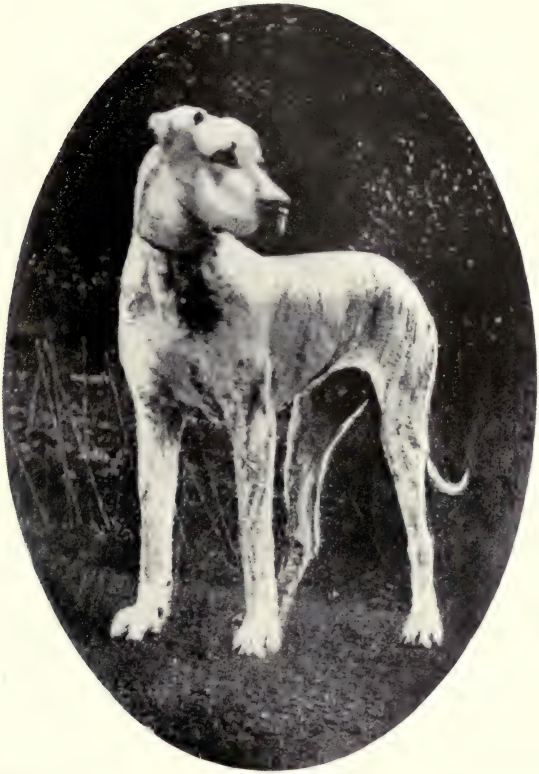
> Come mastin sotto il feroce alano
> Che fissi i denti ne la gola gli abbia,
> Molto s'affanna e si dibatte in vano
> Con occhi ardenti e con spumose labbia,
> E non può uscire al predator di mano,
> Che vince di vigor, non già di rabbia.

National Library of France. These alaunts were sent against cavalry, bearing a brass pot of blazing pitch, ignited by means of alcohol, and trained to fierce biting of the enemy's horses. They were protected by leather coats from the effects of the fire or from kicks and blows.

[33] 2. 297.

[34] Leighton, p. 91, who knows of a mastiff (p. 29) somewhat over 33 inches, while De Noirmont (2. 300) refers to one as having been 37⅖ inches (.95 metre) in height; Leighton, by the way (p. 22), considers Chaucer's alaunt to have been a mastiff. The *New Eng. Dict.,* following Bailey, defines the word as 'wolf-hound'; Scott (below, p. 138) as 'wolf-greyhound'; Rose (below, p. 137) as 'deer-hound'; none of these seems correct.

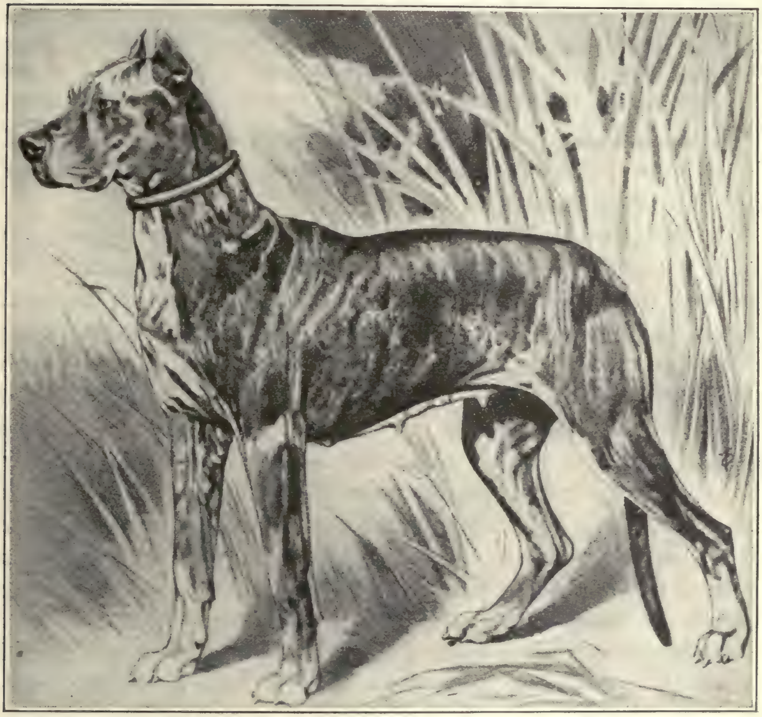
[35] 2. 298.



Chance, a Great Dane, at the Age of Eight Months.
(From Leighton, *New Book of the Dog,* p. 85.)

which is thus translated by Rose:

> As mastiff that below the deer-hound lies,
> Fixed by the gullet fast, with holding bite,
> Vainly bestirs himself and vainly tries,
> With lips besmeared with foam and eyes alight,
> And cannot from beneath the conqueror rise,
> Who foils his foe by force, and not despite.



Vendetta, a Great Dane.
(From Leighton, *New Book of the Dog,* p. 88.)

The *New English Dictionary* furnishes no instance between Chaucer and Berners' Froissart (1525).[36] In literature proper the most conspicuous later use of the word is perhaps that by Scott in the *Talisman* (chap. 6), where he is describing the tent of Richard Cœur de Lion:

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[36] But in the *Sowdone of Babylone* (ca. 1400), we have (54-6):

> To chase the Bore or the Veneson,
> The Wolfe, the Bere, and the Bawson,
> With Alauntes, Lymmeris, and Racches free.

> Skins of animals slain in the chase were stretched on the ground, or extended along the sides of the pavilion, and upon a heap of these silvan spoils lay three *alans,* as they were then called (wolf-greyhounds, that is), of the largest size, and as white as snow. Their faces, marked with many a scar from clutch and fang, showed their share in collecting the trophies upon which they reposed, and their eyes, fixed from time to time with an expressive stretch and yawn upon the bed of Richard, evinced how much they marvelled at and regretted the unwonted inactivity which they were compelled to share.

We have endeavored to show what were the alaunts mentioned by Chaucer. There remains the question, Whence did Chaucer derive his acquaintance with them?

Baillie-Grohman (p. 116) thinks that Chaucer may have seen some alaunts 'recently imported from Spain or France.' But we have no indication that there ever was an alaunt in England. Again he suggests that Chaucer 'may possibly have gone for his models to the court of King John of France (1350-1364), who possessed some of these huge Alans.' Certainly Chaucer can not have gone to Paris before the end of 1360,[37] and we have no ground whatever for assuming that he was on the Continent in the years 1361-3, by the end of which year King John was on his way back to England. If the poet saw the court of France at all, the earliest date we can assign to the visit is 1368, when King John had been dead four years, and then it must have been in the train of Lionel.[38]

It seems much more likely that the alaunts which he delineated in the *Knight's Tale* were those that he saw at the wedding-feast in Milan.[39] He has undoubtedly heightened the descrip-

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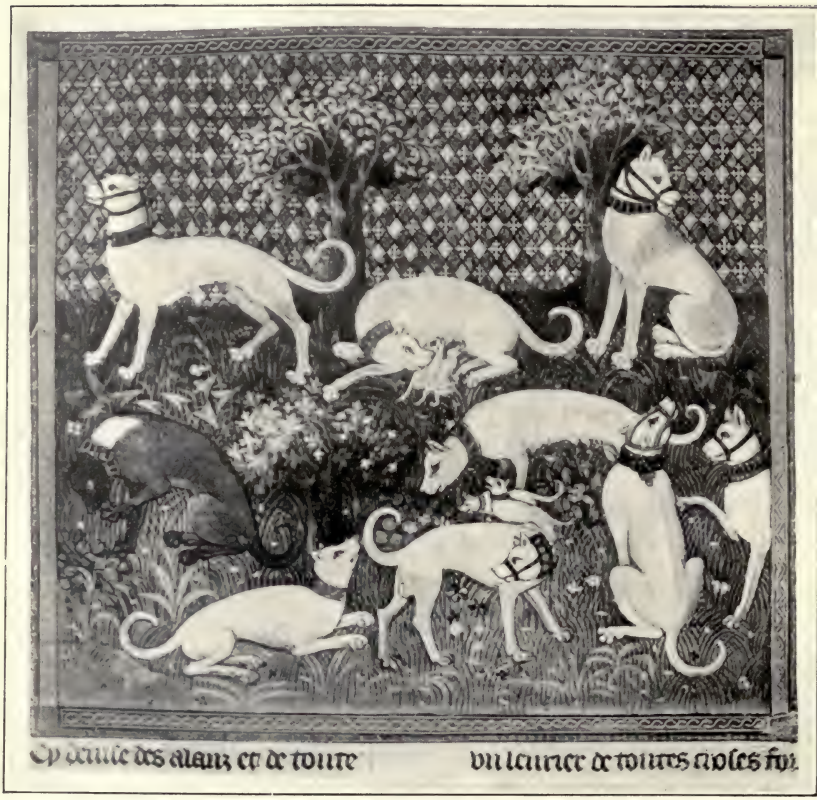
[37] See *Hist. Background,* p. 179.

[38] See *Hist. Background,* pp. 182 ff.; above, pp. 30 ff.

[39] They are thus described in the chronicles of Montferrat, Milan, and Mantua, respectively (*M. H. P.,* p. 1226; *R. I. S.* 16. 739; Alip., p. 1188):

> 'Sei cani alani, et sei gran striveri cum collari de velluto, et fibie dorati, et lassi de seta.'
>
> 'Sex cani allani, et sei grandi striveri cum collari de velluto forniti de ricalcho dorato, et cum lassi de seta.'
>
> E sei cani alani fur presentati,
> Ancora sei stivieri [*sic*] in una schiera.

The other two chronicles refer to them merely as 'cani.' See p. 67.


Cy deuise des alanz et de toute
vn leurier de toutes choses fo

Group of Alaunts.

tion, as he has done elsewhere.[40] The alaunts can not have been 'as grete as any steer,'[41] since we hear of no dog measuring more than 35, or at most 37½ inches in height at the shoulder; Chaucer's have collars of gold,[42] instead of velvet collars and silken leashes, with clasps of gilded brass; 'twenty and mo' replace the six which Chaucer may have seen; 'leoun' and 'deer' are inexact equivalents. On the other hand, the best alaunts were white,[43] and these dogs were regularly muzzled,[44] just as Chaucer says. In fine, when we consider the rarity of alaunts in that period, outside of Spain and the French territory immediately contiguous, neither of which Chaucer ever visited; that Lionel did not bring them back to England, and there is no indication that an alaunt was ever seen in England; that, so far as we know, Chaucer's only opportunity of seeing alaunts would have been either at Paris[45] or at Milan,[46] both of which

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It is possible that the collars, leashes, and buckles appertained merely to the 'striveri'; but in a somewhat similar case, in the first course, the two kinds of furniture are mentioned separately (velvet collars and silken leashes: gilded brazen chains, leather collars, silken leashes).

[40] So in the 'ful ofte tyme' of *Prol.* 52 (cf. *Hist. Background,* pp. 209 ff.); 'no Cristen man *so ofte* of his degree' (*Prol.* 55); '*many* a noble armee' (*Prol.* 60); freckles (*fraknes*) for pockmarks (*Hist. Background,* pp. 167, 170); 'an egle tame, as eny lilie whyt' (*K. T.* 1320; cf. *Hist. Background,* p. 171; in *Guy of Warwick* 823 and *Libeaus Desconus* 773, a gerfalcon is called white as a swan); 'an hundred lordes' (*K. T.* 1321; cf. *Hist. Background,* p. 172, note 1); 'dukes, erles, kinges' (*K. T.* 1324; cf. *Hist. Background,* p. 173, note 1); 'ful many a tame leoun and lepart' (*K. T.* 1328; cf. *Hist. Background,* p. 174, note 1).

[41] Thus in *King Alisaunder,* composed before 1330 (Wells, p. 100), the author says of two greyhounds (5286),

> Hy weren mychel als lyouns;

so in the *Avowynge of King Arthur* (1350-1400) we are told of a wild boar (49),

> He is heȝer thennė a horse.

[42] In *King Alisaunder* (5284) there appear

> In a cheyne of golde tweie greihoundes;

but 'golde' may here mean gilded brass, as in the gift at the first course at the wedding-feast (see above, p. 66).

[43] See above, p. 133.

[44] See above, p. 136.

[45] Hôtel St. Paul.

[46] Perhaps also in the park at Pavia; cf. *Hist. Background,* p. 186, note.

were visited in the journey of Lionel and his train; and that three of the outstanding characters[47] of the finest alaunts were included by Chaucer in his description—their bigness, their whiteness, and the fierceness which required that they should be kept muzzled; it seems most reasonable to suppose that he was present when the six alaunts were delivered over to Lionel, perhaps for his use in the chase, or perhaps to be employed in war.

---

[47] Such as Chaucer could hardly have gleaned from books, seeing that we have no right to assume that he was acquainted with Spanish, that Gaston de Foix's treatise was not even begun till 1387, and that *The Master of Game* was not composed until after Chaucer's death. There remains the possibility that he might have learned of the alaunts from Froissart, who must have seen them on the journey, and again on his visit to Gaston de Foix at Orthez in 1388; but there is a directness in Chaucer's description which seems to point to personal observation.

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TRANSACTIONS OF THE
CONNECTICUT ACADEMY OF ARTS AND SCIENCES
INCORPORATED A. D. 1799

VOLUME 21, PAGES 145-200 FEBRUARY, 1917

The Relationship of the Tetracoralla to the Hexacoralla

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NEW HAVEN, CONNECTICUT
1917

THE TUTTLE, MOREHOUSE & TAYLOR COMPANY

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PREFACE.

This work is the result of studies begun at the University of Michigan in 1913 under Professor E. C. Case, and continued at Yale University during 1915 and 1916 under Professor Charles Schuchert; in 1916 it was submitted to the Faculty of the Graduate School of Yale University as a dissertation in candidacy for the degree of Doctor of Philosophy. Free access to both the Michigan and Yale collections has given the writer the opportunity of examining a large number of Paleozoic corals. In addition to the Yale material, there have been received from Doctor R. G. Carruthers of Edinburgh specimens of *Hexaphyllia, Heterophyllia,* and *Holocystis;* from Doctor Gerhard Holm of Stockholm, specimens of *Calostylis;* from Doctor F. X. Schaffer of the Royal Natural History Museum in Vienna, a number of Hexacoralla from the Alpine Trias; from Doctor R. S. Bassler, specimens of *Calostylis* and *Palæacis* from the United States National Museum collections; from Professor Case, the type specimens of *Leptopora typa* and *Conopoterium effusum;* from Professor R. R. Rowley of Louisiana, Missouri, specimens of *Leptopora* and *Conopoterium.* For all of these loans the writer's thanks are due.

The writer is indebted to Professor Alexander Petrunkevitch of the Zoological Department of Yale University for assistance in making the photographs which accompany this paper; and to Doctor T. W. Vaughan of the United States Geological Survey, Professors W. R. Coe and A. E. Verrill of Yale, and Professor T. C. Brown of Bryn Mawr for discussing with him the problem of coral phylogeny. To Professor Case, who first suggested the corals to him as a fruitful field for study, and to Professor Schuchert, whose constant guidance and kindly criticism have been of great assistance in the preparation of the paper, the writer hereby acknowledges his indebtedness.

While the question of the relationship of the Paleozoic and later corals cannot perhaps be definitely settled until a sequence of coral faunas is established representing Permian and Lower Triassic times, still geological occurrence is a factor that cannot be lightly set aside in forming an opinion on the subject. During the summer of 1915 the writer was employed in making thin sections of Paleozoic corals in the Yale collection. Genera were chosen which had resemblances to Hexacoralla, with the hope of finding some which showed a septal arrangement like that of modern corals. As the work progressed, it became increasingly noticeable that there was a great uniformity in the general method of addition of the septa; that the application of Faurot's rule of quadriseptate arrangement could be quite generally made that, in short, the Tetracoralla are a natural group differing in a definite structural phenomenon from all Mesozoic and later forms in which the ontogeny of the skeleton is known.

Attention was then turned to those Paleozoic forms which have been classed recently with the Hexacoralla. While the writer does not pretend to have settled the question of the origin of the Hexacoralla, it is hoped that the evidence here presented will be conclusive in showing that there are no known Paleozoic Hexacoralla, and that the data furnished by this study of Paleozoic forms favor the theory of direct descent of modern hexacorals from tetracorals.

TERMINOLOGY.

Apical pore. A pore at the proximal end of a corallite which has been produced by budding. It communicates with the cavity of the parent corallite.

Basal disk. The soft floor or basal part of the polyp, in the folds of which all the radial skeletal structures are formed.

Basal plate. The first secretion of calcium carbonate in the form of an exceedingly thin plate. It can only occasionally be seen in adult coralla.

Calyx. The depression at the distal end of a corallite or solitary corallum.

Columella. A central longitudinal rod in the calyx or a knob on the calicular floor. See *Essential columella* and *Parietal columella.*

Corallite. A single individual of a compound corallum.

Corallum. An entire coral skeleton which may be solitary, secreted by a single polyp, or compound and secreted by a colony of polyps.

Costæ. Ridges on the outside of the theca. They are opposite to the septa and are covered by the epitheca when the latter occurs. See *Rugæ.*

Dissepiments. Horizontal or sloping calcareous plates connecting adjacent septa.

Epitheca. A thin external calcareous deposit secreted by the overlapping edge (the "edge zone") of the basal disk in a single corallum. See *Peritheca.*

Essential columella. A columella which develops independently of other calicular structures or rarely as a specialization of tabulæ. See *Tabellæ.*

Eutheca. A wall formed by the introduction of new centers of calcification between the outer ends of the septa. According to Vaughan, there is no systematic importance in the distinction between eutheca and pseudotheca. It is doubtful whether these terms will ever become useful in Paleontology, as the centers of calcification are rarely to be seen in fossil forms. Even the distinction between theca and epitheca is obscure in many cases in Paleozoic corals.

Major septa. The cycle of longer septa which reach nearly or quite to the center of the calyx.

Mesenteries. The radial vertical lamellæ of the soft polyp, composed of mesoglea and endoderm. Upon their sides the muscles are attached.

Minor septa. The cycle of shorter septa which never extend far into the calyx. They appear late in the development of the corallum.

Mural pores. Regularly spaced pores in the thin-walled Tabulata. They are typically developed in the Favositidæ.

Pali. Rods or knobs formed by the lobation of the inner ends of septa.

Parietal columella. A columella which results from a specialization of some of the radial calicular structures such as septa or pali.

Peritheca. A calcareous deposit covering the base and sides of a compound corallum. It is homologous with the epitheca of a single corallum.

Pores. See *Mural pores* and *Apical pores.*

Primary septa. The first group of septa to appear—usually two or four in Tetracoralla; six or twelve in Hexacoralla. See *Major septa* and *Minor septa.*

Protocorallite. The corallite secreted by the protopolyp.

Protopolyp. The parent of a colony of polyps forming a compound corallum.

Pseudotheca. A wall formed by the thickening and coalescing of the outer portions of septa. See *Eutheca.*

Quadriseptal arrangement. A pinnate grouping of septa, alternately long and short. Typically, as in the adult form of *Cyathaxonia cornu,* there are four in a bundle, but often there are only three or two.

Rugæ (*pseudocostæ*). Ridges on the epitheca. They alternate in position with the costæ and septa.

Septa. Vertical radial partitions of the calyx secreted in folds of the basal disk. See *Major, Minor, Primary,* and *Secondary septa.*

Tabellæ. Small arched plates forming a part of the columella in certain genera like *Lonsdaleia.* They slope upward and inward toward the central axis.

Tabulæ. Horizontal plates extending across the whole cavity of a single corallum or corallite.

Theca. The outer wall of a corallite or single corallum, exclusive of the separate outer layer, the epitheca, *q. v.* It may be formed in various ways. See *Eutheca* and *Pseudotheca.*

SUMMARY.

On pages 159 to 160 two theories for the origin of the Hexacoralla are outlined. The first postulates a common ancestry with the Tetracoralla and a lack of the skeleton-forming habit in the Paleozoic Hexacoralla; the second, a direct descent from Paleozoic Tetracoralla to Mesozoic, Cenozoic, and Recent Hexacoralla. The data which form the basis of this paper rather strongly favor the second theory, although no single fact has been found to actually conflict with either. The method by which this general deduction was made may be summarized as follows:

1. There are no known Hexacoralla in the Paleozoic. It is believed that this fact strongly favors the second theory, for otherwise it is necessary to add to the first theory the conception that the stock which finally developed into the Hexacoralla continued throughout the Paleozoic as exclusively soft-bodied forms; and that the post-Paleozoic corals went through a comparable series of changes which produced the same modifications in the soft basal disk as those which were taking place in the skeleton-secreting basal disk of the Tetracoralla. It thus would be necessary to consider that a widespread tendency to an invagination of the basal disk developed in the soft-bodied Paleozoic Hexacoralla, since a columella occurs so commonly in the Triassic forms.

2. The case of *Turbinolia,* a genus of living Hexacoralla, whose early life history so closely parallels that of Tetracoralla, suggests a very close relationship between the Tubinolidæ and Tetracoralla.

3. The Cyathophyllidæ and Zaphrentidæ approached Mesozoic time as strong stocks capable of important structural variation.

4. A marked tendency among Carboniferous forms is the widespread development of columellas. Even the conservative genus *Zaphrentis* was subject to this change. The columella is a far more prominent feature of the Hexacoralla than it is of the Tetracoralla. A correlative tendency is toward an increase in the number of septa and a consequent approach to radial symmetry.

5. Some change in structure or function in the coral polyp is indicated by this development in the late Paleozoic.

IMPORTANCE OF THE QUESTION OF PRIMARY SEPTA.

The ontogeny of the Tetracoralla has been the subject of a great deal of investigation and debate. It is a difficult subject because the group is extinct and any reasoning which involves the soft parts of the polyps must be done by analogy with living corals, while the part which is preserved as a fossil represents merely a substructure, external and not readily modified by vital changes in the function of the soft parts and yet at the same time extremely impressionable by varying or accidental external forces.

Because of the importance of the primary septa in the discussion of the phylogeny of the Tetracoralla the various papers on this subject have been repeatedly summarized and only a short account of them will be given here. Other summaries may be found in Duerden (1902) and Faurot (1909).

THEORIES OF PREVIOUS WRITERS.

Milne-Edwards and Haime (1851) regarded the Tetracoralla as having four primary septa to which the other (secondary) septa were added.

Ludwig (1861-66) insisted on the importance of the pinnate arrangement of septa in four groups but considered this condition to have been derived from an earlier grouping by six, and also that there were six primary elements, only four of which were involved in the formation of succeeding septa.

Kunth (1869) also clearly described the pinnate manner of addition of the secondary septa.

Pourtalès (1871) announced the discovery of an early stage of growth with only six septa. The specimens used were of *Lophophyllum proliferum* and conclusions were reached similar to those of Ludwig already stated.

Quelch (1886) and Ogilvie (1897) paid much attention to the microstructure, finding evidence of a close relationship between Tetracoralla and Hexacoralla.

Neumayr (1889 A and B) presented a strong argument for the view that Hexacoralla are directly descended from the Paleozoic forms, calling attention to the geological occurrence, and to certain peculiarities of coral evolution—tendencies which are now referred to as parallel development.

Von Koch (1896) argued that the Tetracoralla arose from a stock whose individuals had six primary elements.

Van Beneden (1897) believed the fourfold structure of Tetracoralla indicated their close relationship to the Scyphomedusæ.

Up to 1902 the idea of a primitive six-rayed condition in Tetracoralla had not received much support from paleontologists, but in 1902 Duerden, using new methods of careful sectioning, found a stage in *Lophophyllum proliferum* with only six septa. He concluded that this was the earliest skeletal stage. (See Fig. 1.)

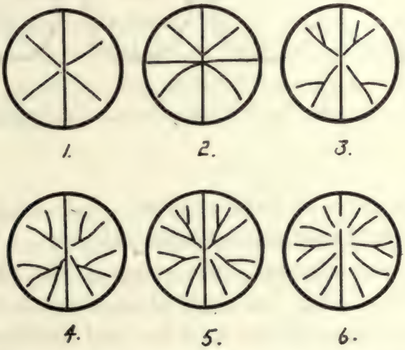

Fig. 1. The development of *Lophophyllum proliferum.* This and the following diagrams represent transverse sections taken in a continuous series from near the tip of the corallum to the calyx. The cardinal septum in each case is above; the counter septum below. × ½. (After Duerden.)

Gordon (1906), working with decalcified siliceous specimens, announced the discovery of a stage with four septa in *Streptelasma profundum.* This precipitated an argument which developed new interest in the problems of morphology and ontogeny in both living and fossil forms of Anthozoa.

Carruthers (1906) finally settled the matter by finding in *Zaphrentis phillipsi* stages with "one," four and six septa (see Fig. 2). It was found by a comparative study of a number of sections that the stage with "one" septum was quickly succeeded by a stage in which two new septa appeared as a bilateral pair. As the single "primary septum" is broken by a central gap later in the development, it is evident that it really represents two septal elements and so the stage at which the first bilateral pair appears is called the four-septal stage. The first bilateral pair is quickly followed by a second one which appears on the opposite side of the calyx, bringing the number of septa up to six. A pause in the development occurs at this time, and after this the septa are added in a pinnate manner, their inner ends joining the septa of the first and second bilateral pairs. Whether or not this pause indicates an important stage in the phylogeny of the Tetracoralla is not clear, as such phenomena may be explained in various ways, but it occurs at a decided break in the ontogeny of the individual and so must be considered as probably representing a former adult stage.

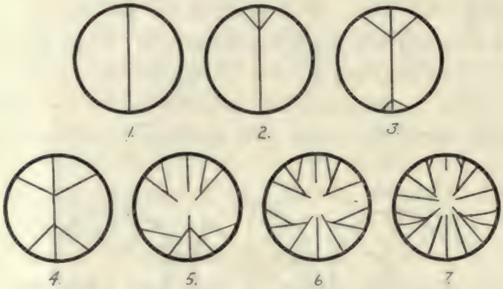

Fig. 2. The development of a Carboniferous Zaphrentid. × ½. (After Carruthers.)

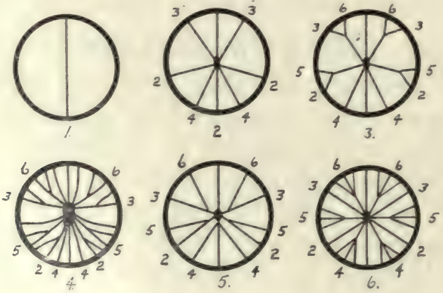

Fig. 3. The development of *Cyathaxonia* (1, 2, 3, 4) and of *Turbinolia* (1, 2, 3, 5, 6). The first twelve septa appear in the same order and with the same arrangement. × ½. (After Faurot.)

Faurot (1909), using Duerden's method of grinding down the coral tip and sketching each change in the arrangement of the parts, obtained a very complete history of the septal sequence in *Cyathaxonia cornu.* This led to an elaboration of Kunth's law of pinnate arrangement. A short summary paper by the same author (1914) gives his conclusion that in the case of the hexacoral *Turbinolia,* and the tetracoral *Cyathaxonia,* there is the same order of appearance and arrangement of the first twelve septa. (See Fig. 3.)

From the work of Lacaze-Duthiers, Von Koch, and others, it has been known for a long time that among modern corals some develop six primary septa, in others twelve septa appear all at once. In *Turbinolia* it is reported, however, that there is a stage with a "single septum" of two septal elements, which is succeeded by stages with four and six septa. Either the time of the beginning of calcification is a stage easily retarded or accelerated, or the modern Hexacoralla must be considered as a polyphyletic group.

CONCLUSIONS.

Although the ontogeny of corals, as far as septal sequence is concerned, is now known for a considerable number of both living and fossil genera, and is found to be quite uniform within a group, the phylogenetic relations of the Tetracoralla and Hexacoralla still are not wholly cleared up. Modern work on the phylogeny of recent Anthozoa shows that the arrangement of the mesenteries indicates most closely the various events in the history of the phylum and therefore the most promising results are apparently to be gained from a study of the arrangement of septa in the two sub-classes. This method, as can be seen from the above résumé, has been applied by nearly all the recent workers. It carries the assumption that the soft parts of the polyp of the extinct Tetracoralla, of which nothing is known except by analogy with modern forms, were essentially the same as those of living Hexacoralla. This assumption is considered to be justifiable by those who have studied both groups.

The results obtained by this method are divergent and those relating to the results attained through ontogeny should be tested in the light of chronogeny (geological appearance), and of the geographical distribution of the coral stocks, a principle also insisted upon by Neumayr (1889). The work of Duerden and Brown seems to indicate that the origin of Hexacoralla is not a direct one from Tetracoralla, while the work of Faurot, Carruthers, and the author has brought out a similarity in the early ontogenetic history in the two groups that is perhaps more easily explained by a theory of direct descent. This question will be discussed on later pages (161–195).

THE TWO THEORIES OF THE ORIGIN OF HEXACORALLA.

As has been shown, there are two theories accounting for the origin of the Hexacoralla, one of which depends for its proof upon comparative anatomy of living corals, the other upon the study of the geological sequence and relationships of fossil forms.

THEORY OF COMMON ANCESTRY.

The first theory states that the Hexacoralla arose early in the Paleozoic from a stem which also gave rise to the Tetracoralla and Tabulata, but that the Hexacoralla did not commonly secrete a skeleton until the Mesozoic. A large amount of the history of the Hexacoralla would accordingly be lost, and as the phylum was already a very old one when the lime-secreting habit became firmly established in the Triassic, the early ontogenetic stages reflected in the skeleton of Mesozoic forms would be of doubtful phylogenetic value. The only test of the theory is an exhaustive study of the analogy of morphological characters—a method difficult to apply to an extinct group in which there is no direct contact of the vital organs with the skeleton, though much can be learned from the characters of living corals.

Brown (1915: 542) has stated this theory as follows:

"1. All Anthozoa, Paleozoic, Mesozoic, and Modern, are derived from one common stem in which the zooids were bilaterally symmetrical and probably had eight mesenteries.

"2. One branch from this common stem, arising early in the Ordovicic, leads up to the modern Alcyonaria (Octocoralla). * * *

"3. Another branch from this common stem, likewise arising early in the Ordovicic, embraces the typical tetrameral corals of the Paleozoic—the Rugosa. * * *

"4. Another branch from the common stem gave rise to the Mesozoic and later zoantharians—Actinians, Scleractinians, Zoanthids and Cerianthids."

This explanation carries an assumption which is very difficult to accept. The advocates of this theory assume that throughout the Paleozoic there developed side by side a group of skeleton-secreting Tetracoralla and a soft-bodied group which later gave rise to the Hexacoralla. Moreover, they assume that the evolution in the soft-bodied forms so closely paralleled that of the Tetracoralla that when the former finally adopted the skeleton-forming habit they had developed the same specializations of the basal disk. It is difficult to suppose, for instance, that the soft-bodied hexacorals of the late Paleozoic acquired a basal invagination as the Tetracoralla did, and this is necessary, under the theory of common ancestry, to account for the widespread occurrence of the columella in the Mesozoic.

THEORY OF DIRECT DESCENT.

The second theory is that the Hexacoralla descended from the Tetracoralla in late Paleozoic or, what is more probable, in early Mesozoic time. A comparative study of early ontogenetic stages should be valuable, but the chief test of this theory is whether or not a sufficiently close relationship can be established between the Hexacoralla of the Middle Trias and the late Paleozoic corals. The greatest difficulty in applying this method is a lack of data. The record of corals in the Permian is, as a rule, meagre, though in India there seem to be many of them, and a few are known from the Australian "Carbopermian"; but there is as yet no knowledge of any corals from the Lower Triassic.

The first consideration in comparing these two theories is, whether or not there are any Paleozoic forms which can confidently be referred to Hexacoralla. If such forms occur, then the second theory must be modified or abandoned.

Two Paleozoic genera, *Palæacis* and *Calostylis,* have been repeatedly, though always with some opposition, designated as Hexacoralla. There are, however, very good reasons for saying that neither of the genera has any such close relationship with modern corals, as will be seen by the following analysis of these perplexing forms.

TESTS OF THE THEORY OF DIRECT DESCENT FROM TETRACORALLA.

GEOLOGICAL OCCURRENCE.

So-called Paleozoic Hexacoralla.

Palæacis and its Relation to the Tabulata.

A description of the genera *Palæacis, Microcyathus,* and *Ptychochartocyathus,* and a list of species are given on pages 165-168.

Before its microstructure became known, *Palæacis,* which then included the above genera, was supposed to be one of the Porifera or sponges. Its external appearance, the occurrence of small pores in the outer wall, larger pores in the cups, and a system of contorted canals, all rather favor this opinion, but there are other and more important structural conditions that cannot be explained as due to a relationship to Porifera.

Lack of Spicules.—First, although looked for again and again, no spicules have been definitely seen by any one. This is all the more important as the organisms occur preserved in a variety of ways, although numerous sections have never been possible on account of the scarcity of material.

Regularity in Budding and Constancy of Shape.—A much more decisive fact and one that removes the genus definitely from the Porifera is that there is a *definite* law of budding in *Palæacis,* the same law applying sometimes to more than one species (see Pl. I, Figs. 1 and 2). This regularity in budding controls the shape of the individuals so thoroughly that it would be hard to find among corals a more constant shape than that of the type species, *P. cuneiformis.* There is no such control of individual shape in the Porifera. In no phylum is a greater variety of shapes in the same group possible than in the Porifera and in no phylum is external shape of less systematic importance (*cf.* Zittel-Eastman 1913: 47). The cuneate base which occurs in *P. cuneiformis, P. obtusa, P. compressa,* and *P. cavernosa* is a feature seen in some species of Hexacoralla which are not closely attached to their foundation. The hexacoral *Endopachys maclurei* of the Eocene of Alabama has a cuneate base quite similar to that of *P. obtusa.* Such a regular external form as this is again not a character which is to be expected in Porifera.

Calcareous Structure.—A very suggestive coral-like feature is the structure of the calcium carbonate as seen in thin sections of unaltered calcareous specimens. Diverging fibers, arranged in a manner comparable to that in recent corals, show that this material formed the original skeleton of *Palæacis. P. cuneiformis,* the genotype, does not reveal any definite structure, as it is invariably replaced by silica, but lamellæ can be distinguished on the surface, giving the aspect of diverging grooves and ridges. Between the ridges there are pores which open into canals leading into the main cavity. The inner ends of these canals have often been wrongly called mural pores and the genus has been placed on that account with the Tabulata or even removed to the perforate Hexacoralla.

P. obtusa occurs with the original structure of the calcium carbonate preserved and with the interstices filled by secondary silica and iron pyrite. Thin sections show the radial lamellæ (Pl. I, Fig. 3). *Microcyathus depressus,* a closely related form, shows the same fibrous structure of the calcium carbonate and the inner pores communicating with the contorted canals (Pl. I, Fig. 4).

Comparison with Tabulata.—The one criterion which has proved satisfactory in distinguishing between Hexacoralla and Tetracoralla is the manner of addition of the secondary septa. This criterion, however, cannot be applied to forms like *Palæacis,* since they have no definite septa. If the lamellæ really represent septa, which is very improbable, their arrangement is obscured by the interlacing of the canals. Enough is known of the calcareous specimens to show that there are no structural characters which prevent classing these genera with Anthozoa. On the other hand, there are good reasons, stated below, for including them under the sub-class Tabulata in close relationship with *Pleurodictyum, Leptopora,* and *Vaughania.* All these genera are characterized by large individuals with thick walls which are traversed by canals very irregular in location and direction. There are no mural pores such as those of *Favosites,* although apical pores and canal openings give a similar appearance. The manner of budding is by pairs, with one individual slightly in advance of the other. The buds are added laterally in such a way that there may be formed a thin encrusting or globular colony.

Palæacis, Microcyathus, and *Ptychochartocyathus* belong in this group, having the same kind of thick walls and interlacing canals with pores opening on the inner cavity. The same laws of budding apply to them, except that in the case of *P. cuneiformis* the addition of buds is vertical instead of radial.

It is here proposed to place these closely related genera, *Palæacis, Microcyathus,* and *Ptychochartocyathus,* in one family, Leptoporidæ. This name was used in 1892 by Miller for a family which contained the one genus *Leptopora* and which was placed doubtfully with the Tabulata. As the family was not defined, a definition may be formulated which will include the other closely related genera, as follows:

Phylum Cœlenterata.
Sub-phylum Cnidaria.
Class Anthozoa.
?Sub-class Tabulata (of uncertain relationship).
Family Leptoporidæ Miller.

Leptoporidæ: Specialized Tabulata with large corallites. Tabulæ much modified or wanting. No true septa or true mural pores. Walls thick; traversed by canals. Inner wall grooved, ridged, or occupied by irregularly spaced pores which are the openings of the canals.

Genus *Leptopora* Winchell.

1864 *Leptopora* Winchell. Proc. Acad. Nat. Sci. Phila., Vol. XV, 1863: 2.
1888 *Cleistopora* Nicholson. Geol. Mag., Dec. III, Vol. V: 150-152.

Original Description of Leptopora.—"Corallum occurring in thin discoidal masses; cells very shallow, crowded, polygonal, separated by a common cell wall, which is vertically striated; interior of cells filled with a finely vesicular tissue; cups polygonal, concave, elevated in the center, and displaying numerous radial lamellæ."

Original Description of Cleistopora.—"Corallum small, discoid, usually attached by its entire base to foreign bodies. Corallites short, prismatic, without tabulæ, and having the inferior portion of the visceral chamber completely filled up with loosely reticulate calcareous tissue. Septa represented by striæ only. Walls thick, traversed by minute irregular canals or pores."

By comparing the above original descriptions it may be seen that there is no essential character to distinguish between them. A comparison of the original figures of *Michelinia? geometrica* Edwards and Haime, which is the genotype of *Cleistopora,* with the type specimen of *Leptopora* leaves no doubt that the genera are identical.

LIST OF SPECIES.

Leptopora typa Winchell. Genotype.
  Proc. Acad. Nat. Sci. Phila., Vol. XV, 1863, 1864: 3.
  Locality and horizon: Burlington, Iowa. Mississippian (Kinderhook).

Leptopora winchelli White.
  Bull. U. S. Geol. Geog. Surv. Terr., Vol. V, No. 2, 1879: 211.
  Locality and horizon: Near forks of Logan River, Bear River Range, North Utah. Mississippian.

Leptopora placenta (White).
  Michelinia? placenta White. Cont. Ind. Pal., No. 8, 1880: 157, Pl. 39.
  Locality and horizon: Sedalia, Missouri. Mississippian (Chouteau).

Leptopora expansa (White).
  Michelinia expansa White. Cont. Ind. Pal., No. 8, 1880: 158, Pl. 39.
  Locality and horizon: Sedalia, Missouri. Mississippian (Chouteau).

Leptopora gorbyi Miller.
  17th Ann. Rep. Geol. Surv. Ind., 1891, 1892: 616; adv. sheets, 1891: 6.
  Locality and horizon: Near Sedalia, Missouri. Mississippian (Chouteau).

Leptopora procera Rowley.
  Am. Geol., Vol. XXVII, 1901: 349.
  Locality and horizon: Annada, Missouri. Mississippian (Chouteau).

Leptopora ramosa Rowley.
  Am. Geol., Vol. XXVII, 1901: 349.
  Locality and horizon: East of Curryville, Missouri, associated with *L. placenta.* Mississippian (Chouteau).

Genus *Palæacis* Milne-Edwards.

1860 *Palæacis* Milne-Edwards (Haime MS.). Hist. Nat. Cor., Vol. III: 171.
1861 *Sphenopoterium* Meek and Worthen. Proc. Acad. Nat. Sci. Phila., Vol. XII, 1860: 447.
1866 *Sphenopoterium* Meek and Worthen. Geol. Surv. Ill., Vol. II: 145.
1866 *Palæacis* Seebach. Zeit. deutsch. geol. Gesell., Vol. XVIII: 308.
1869 *Palæacis* Kunth. Ibid., Vol. XXI: 185.
1871 *Palæacis* Koninck. Mémoire presentée à la classe des sciences le 9. Mai: 154.
1876 *Palæacis* Roemer. Lethæa Geognostica, Pt. 1, Lethæa Palæozoica, Atlas: Pl. 39 and explanation.
1878 *Palæacis* Etheridge and Nicholson. Ann. Mag. Nat. Hist., Ser. 5, Vol. I, No. 3: 206.
1892 *Palæacis* Miller. 17th Ann. Rep. Geol. Surv. Ind.: 614; adv. sheets, 1891: 4.
1896 *Palæacis* Hinde. Quart. Jour. Geol. Soc., London, Vol. LII: 440.
1909 *Palæacis* Weller. Bull. Geol. Soc. America, Vol. XX: 277.
1913 *Palæacis* Zittel-Eastman. Text-book of Paleontology: 106.

Original Description of Palæacis.—The original description by Milne-Edwards was taken from unpublished manuscripts of Haime which were to have been included in the *Histoire Naturelle des Coralliaires.* On account of the death of Haime, that work was published by Milne-Edwards alone. The description in translation is as follows:

Polypary free but composite, rounded and very compressed at its base; calices disposed, one at the summit, and the others in pairs upon the lateral margins. Cœnenchyma finely vesicular.

List of Species.

Palæacis cuneiformis Milne-Edwards. Genotype.
Hist. Nat. Cor., Vol. III, 1860: 171.
Sphenopoterium cuneatum Meek and Worthen. Proc. Acad. Nat. Sci. Phila., Vol. XII, 1860, 1861: 448.
Locality and horizon: Spergen Hill, Indiana. Mississippian (Spergen).

Palæacis obtusa (Meek and Worthen).

Sphenopoterium obtusum Meek and Worthen. Proc. Acad. Nat. Sci. Phila., Vol. XII, 1860, 1861: 448.

Palæacis cymba Seebach. Zeit. deutsch. geol. Gesell., Vol. XVIII, 1866: 309.

Palæacis umbonata Seebach. Ibid., Vol. XVIII, 1866: 309.

Locality and horizon: Nauvoo, Illinois. Mississippian (Keokuk).

Palæacis compressa (Meek and Worthen).

Sphenopoterium compressum Meek and Worthen. Proc. Acad. Nat. Sci. Phila., Vol. XII, 1860, 1861: 448.

Locality and horizon: Nauvoo, Illinois. Mississippian (Keokuk).

Palæacis cavernosa Miller.

Adv. sheets, 17th Ann. Rep. Geol. Surv. Ind., 1891: 4.

Locality and horizon: Jackson County, Indiana. Mississippian (Waverly).

Palæacis carinata Girty.

Ann. N. Y. Acad. Sci., Vol. XX, No. 2, Pt. 2, 1910: 190.

Locality and horizon: Arkansas. Mississippian (Fayetteville shales).

Genus *Microcyathus* Hinde.

1896 *Microcyathus* Hinde. Quart. Jour. Geol. Soc., London, Vol. LII: 447.

Hinde suggested that a new genus be based upon *Hydnopora? cyclostoma* Phillips. It is here proposed to extend the genus to several other forms. Specimens of the genotype have not been accessible, but it is believed to be definitely related to the species listed below. The genus may be defined as follows:

Leptoporidæ, sometimes attached but often without a trace of attachment scars. Shape roughly spheroidal. Walls very thick; composed of contorted lamellæ pierced by ramifying canals. Pores, communicating with the canals, lining the steep walls of the inner cavity. Calices with broad, almost flat, floors. Number of corallites seldom more than three.

This genus differs from *Palæacis* in the microstructure, the external shape, and the cup-shaped or almost cylindrical instead of conical cavities.

LIST OF SPECIES.

Microcyathus cyclostoma (Phillips). Genotype.

Hydnopora? cyclostoma Phillips. Geology of Yorkshire, Pt. 2, Mountain Limestone Dist., 1836: 202.

Locality and horizon: Western Europe. Lower Carboniferous.

Microcyathus enormis (Meek and Worthen).

Sphenopoterium enorme Meek and Worthen. Proc. Acad. Nat. Sci. Phila., Vol. XII, 1860, 1861: 448.

Locality and horizon: Rockford, Indiana; Clarksville, Missouri. Mississippian (Kinderhook).

Microcyathus? antiquus (McCoy).

Astræopora antiqua McCoy, Synop. Carb. Limestone Foss. Ireland, 1862: 191.

Locality and horizon: Ireland. Lower Carboniferous.

Remarks: This species has been considered to be identical with *M. cyclostoma,* but Hinde examined specimens from the type locality and decided that they were distinct. He even suggested that they may be placed in a distinct genus.

Microcyathus depressus (Meek and Worthen).

Sphenopoterium enorme var. *depressum* Meek and Worthen. Geol. Surv. Ill., Vol. II, 1866: 146.

Locality and horizon: Monroe County (Salt Lick Point), Illinois; Missouri. Mississippian (Fern Glen).

Microcyathus koninckii (Etheridge and Nicholson).

Palæacis cyclostoma var. *koninckii* Etheridge and Nicholson. Ann. Mag. Nat. Hist., Ser. 5, Vol. I, 1878: 224.

Locality and horizon: Western Europe. Lower Carboniferous.

Microcyathus bifidus (Weller).

Palæacis bifidus Weller. Bull. Geol. Soc. America, Vol. XX, 1909: 277.

Locality and horizon: Missouri and Illinois. Mississippian (Fern Glen).

Genus *Ptychochartocyathus* Ludwig.

1866 *Ptychochartocyathus* Ludwig. Paläontographica, Vol. XIV: 231.

The genus was not defined and the figures are not definitive, but apparently this group differs from *Palæacis* in having well defined spines on the inside of the cup, no pores, and a basal plate. There is but one species, *Ptychochartocyathus laxus* Ludwig, from the Upper Carboniferous (Culm) of Rothmaltersdorf, near Glatz, Germany.

Original Description of the Type Species (*translation*).—Corallum compound, hemispherical, with a concentrically striated basal plate [epitheca?]. Cups deep and broad, with thick walls without pores. Septa represented by twenty-four large spines reaching down to the bottom of the cup. Between these, secondary septa (*Kerbleisten*) represented by rows of fine spines not reaching to the base of the cup. Depth of cups 0.8 cm.; breadth 0.7 cm.; height of corallum 1 cm.

The figures are very suggestive of *Palæacis* but until a comparison between European and American forms is made this genus may be retained.

Genus *Pleurodictyum* Goldfuss.

1826 *Pleurodictyum* Goldfuss. Petrif. Germ., Vol. I: 113.
1851 *Pleurodictyum* Milne-Edwards and Haime. Archiv. d. Mus., Vol. V: 210.
1856 *Pleurodictyum* King. Ann. Mag. Nat. Hist., Ser. 2, Vol. XVII: 131.
1863 *Pleurodictyum* Rominger. Ibid., Ser. 3, Vol. XI: 390; also Am. Jour. Sci., (2), Vol. XXXV: 82, 84.
1868 *Pleurodictyum* Meek and Worthen. Geol. Surv. Ill., Vol. III: 407.
1874 *Michelinia* (partim) Hall. 26th Ann. Rep. N. Y. State Mus. Nat. Hist., 1873: 113.
1879 *Pleurodictyum* Nicholson. Pal. Tab. Corals: 142.
1883 *Pleurodictyum* Roemer. Leth. Geog., Pt. I, Leth. Pal.: 428.
1888 *Pleurodictyum* Herrick. Bull. Denison Univ., Vol. III: 30.
1891 *Pleurodictyum* Beecher. Trans. Conn. Acad., Vol. VIII, Pt. 2: 211.

The early descriptions are not satisfactory, as the structure of the genus was not understood. The following description is given in Zittel-Eastman (1913: 114):

"Corallum depressed, discoidal, circular or elliptical in contour, lower surface covered with concentrically striated epitheca, and frequently a foreign vermiform body occupying the center of the base. Corallites small, polygonal, contracted inferiorly so as to become funnel-shaped. Septa represented by faint marginal ridges, or obsolete. Walls pierced by irregularly distributed mural pores; tabulæ sparse."

LIST OF SPECIES.

Pleurodictyum problematicum Goldfuss. Genotype.
Petrif. Germ., Vol. I, 1826: 113.
Locality and horizon: Western Europe. Middle Devonian (Eifelian).

Pleurodictyum stylopora Eaton.
Geol. Text-book, 1832: 40, Pl. 4.
Locality and horizon: Western New York. Devonian (Hamilton).

Pleurodictyum lonsdalei Richter.
Zeit. deutsch. geol. Gesell., Vol. VII, 1855: 559-565.
Locality and horizon: Near Saalfeld, Thüringen, Germany. Devonian.

Pleurodictyum(?) selcanum Giebel.
Silur. Fauna d. unt. Harzes, 1858: 56, Pl. 6.
Locality and horizon: Mägdesprung and Zorge, Germany. Lower Devonian (Hercynian).

Pleurodictyum constantinopolitanum Roemer.
N. Jahrb. f. Min., etc., 1863: 519, Pl. 5.
Locality and horizon: Near Constantinople, Turkey. Devonian.

Pleurodictyum megastomum McCoy.
Ann. Mag. Nat. Hist., Ser. 3, Vol. XX, 1867: 201. (Listed but not figured or described.)
Locality and horizon: Victoria, Australia. Silurian.

Pleurodictyum lenticulare (Hall).
Michelinia lenticulare Hall. 26th Ann. Rep. N. Y. State Mus. Nat. Hist., 1873, 1874: 113.
Locality and horizon: New York. Devonian (Hamilton).

Pleurodictyum petrii Maurer(?).
N. Jahrb. f. Min., etc., 1874: 456, Pl. 7.
Locality and horizon: Near Giessen, Germany. Lower Devonian.

Pleurodictyum americanum Roemer.
Leth. Geog., Pt. I, Leth. Pal., Atlas, 1876: Pl. 33.

Locality and horizon: Western New York. Devonian (Hamilton).

Remarks: This species is probably a synonym for *P. stylopora.*

Pleurodictyum zorgense Kayser.

Fauna d. ältesten Devon-Ablagerungen d. Harzes, 1878: 229, Pl. 33.

Locality and horizon: Harz Mountains, Germany. Lower Devonian.

Pleurodictyum amazonicum Katzer.

Bol. Mus. Paraense, 1898: 208; also Grundz. d. Geol. d. unt. Amazones, 1903: 268.

Locality and horizon: Rio Maecurú, Lower Amazon region, Brazil. Lower Devonian.

Genus *Vaughania* Garwood.

1913 *Vaughania* Garwood. Quart. Jour. Geol. Soc., London, Vol. LXVIII: 564.

Original Description.—"Corallum discoid, upper surface convex, margin lobulate; size variable, specimens occur measuring up to 5 cm. in diameter. Thickness in center = 3 or 4 mm., becoming somewhat less towards the margin. Base concave, covered with a well-marked, wrinkled epitheca, wrinkles arranged in festoon-like concentric folds parallel to the margin. Corallum apparently free. Corallites very short, closely set, polygonal, as a rule irregularly hexagonal; on an average, ten corallites occur in a length of 4.5 cm. Calices shallow, rather over 1 mm. deep, walls less than 0.75 mm. thick; floors nearly smooth and flat, but curving upwards at the margins to meet the base of the walls.

"In well preserved specimens the surface of the walls presents a somewhat rugose appearance, resembling Nicholson's figure of *Cleistopora geometrica,* but there are no definite ridges or striæ representing septa.

"The corallum is traversed by a system of large perforations or tubes, arranged on a definite plan. This is found in all well-preserved specimens, though it is liable to slight variation in detail.

"Round the base of the wall of each calyx runs a polygonal or roughly circular perforation or ring-canal, which follows the contour of the wall; this lies just inside the angle formed by the junction of the wall with the floor of the calyx, and slightly below the level of the floor. Thus the base of each wall is traversed by two such tubes bordering the margins of two contiguous corallites. From these ring-canals, branches are given off, which open by pores into the floor of the calices near the base of the walls. Other branches are given off in the opposite direction from the ring-canals and traverse the wall horizontally, connecting the ring-canals of two adjacent corallites. Other pores are occasionally seen, opening higher up on the walls of the calices; these are, however, more irregular in their distribution. The pores opening round the basal margin of the calices are fairly numerous, and are placed close together, the distance between them being generally not much greater than the diameter of the pores themselves.

"In microscopic sections the walls and floors of the corallites exhibit a finely crystalline fibrous structure, similar to that which characterizes many recent corals. The long axes of the fibres are arranged perpendicularly to the walls and floors of the calices. There is no trace of the trabecular structure figured by Nicholson in his descriptions of *Cleistopora* and *Palæacis,* while tabulæ are entirely wanting. This compact fibrous cœnenchyma is perforated by the tubes described above; and, in the neighborhood of the tubes, the fibres are arranged in a radial manner perpendicularly to the walls of the tubes. Vertical sections cut at right-angles to a corallite-wall show two perforations below the base of the wall and on each side of it, representing transverse sections of the two ring-canals of contiguous corallites. From these, in many sections, tubes can be observed passing obliquely outwards and upwards, and penetrating the floors of the calices at the base of the walls, where they terminate at the surface to form the pores already described. In horizontal sections, prepared so as to expose the base of the walls a short distance below the floors of the calices, the system of ring-canals and their connecting tubes can be well seen, the canals being rendered conspicuous by their infilling of darker argillaceous material."

The author of the genus directs attention to resemblances to *Leptopora* (*Cleistopora*) *geometrica,* and to *Palæacis, Pleurodictyum* and *Microcyathus.* The following points of difference from *Leptopora* (*Cleistopora*) are cited: (1) The absence of the trabecular structure which characterizes that genus; (2) the presence of compact fibrous cœnenchyma, forming the whole of the corallum; (3) the presence of a definite system of ring-canals and branches; (4) the presence of a well-developed basal epitheca, which is unattached.

The differences from *Pleurodictyum* are given as: (1) The calices are low and vertical, not funnel shaped; (2) there is no trace of tabulæ or septal spines; (3) the corallum is unattached; (4) there is no commensal vermiform body; (5) ring-canals are present. *Pleurodictyum* resembles *Vaughania,* however, "in the presence of intramural pores and of a concentrically striated basal epitheca."

The differences from *Palæacis* are: (1) A much greater number of calices; (2) the corallites not wedge-shaped, but arranged with their walls perpendicular to the basal plate; (3) the calices having (comparatively) narrow and polygonal walls rising from the basal plate, and not excavated as circular pits in the general mass of the corallum; (4) the absence of vertical striæ in the calices: (5) the regular arrangement of the perforations to form ring-canals; (6) lack of attachment.

Palæacis has similar pores. *Microcyathus,* which contains species often referred to *Palæacis,* resembles *Vaughania* in the compact calcareous matter in its walls, the wrinkled basal epitheca (this however is not always present in *Microcyathus*) and the presence of pores. These latter are more irregular in the case of *Microcyathus* and cannot be as correctly defined as a definite tubular system. *Microcyathus* has more rounded calices and blunt spines which seem to represent septa.

Genus *Conopoterium* Winchell.

1865 *Conopoterium* Winchell. Proc. Acad. Nat. Sci. Phila., Vol. XVII: 110.

This genus is doubtfully referred to the Leptoporidæ, as it exhibits some characteristics of the Favositidæ and may represent a transitional form.

Original Description.—"Corallum compound, generally free, sometimes adherent, but without a distinct base of attachment. Cells somewhat crowded, rapidly enlarging, inseparable, with only occasional and rudimentary diaphragms, and no radial lamellæ. Walls marked internally by vertical striæ, and a few pores which communicate between the cells. Exterior, where exposed, covered by an epitheca, marked only by irregularly encircling striæ. Cells increasing laterally and interstitially.

"This genus, perhaps, approaches nearest to *Sphenopoterium* [*Palæacis*] Meek and Worthen. It differs in the absence of the cuneate form of the base even in *Sphenopoterium*—the cell mouths in this genus being turned indifferently in all directions. The cells also are smaller and more numerous, and the fewer mural pores communicate from cell to cell, instead of terminating in the intercellular substance. But one species has thus far been obtained."

TYPE SPECIES.

Conopoterium effusum Winchell.

Proc. Acad. Nat. Sci. Phila., Vol. XVII, 1865: 111.

Locality and horizon: Clarksville, Missouri. Mississippian (Lithographic limestone).

This genus differs from the Leptoporidæ in its thin walls with their true mural pores, but the manner of budding and the lack of tabulæ may warrant its inclusion in this family. If it should be retained, the species *Michelinia* (*Pleurodictyum*) *convexa*, as illustrated by Hall (Illust. Dev. Foss.: XV, XV A), might also be added.

The Genus *Calostylis* and its Position in the Classification.

Phylum Cœlenterata.
Sub-phylum Cnidaria.
Class Anthozoa.
Sub-class Tetracoralla.
Family Calostylidæ.

Genus *Calostylis* Lindström.

1868 *Calostylis* Lindström. Ofv. K. Svenska Vetensk.-Akad. Förhandl., Vol. XXV: 421.

1870 *Calostylis* Lindström. K. Svenska Vetensk.-Akad. Handlingar, Vol. IX, Pt. 6: 1.

1878 *Calostylis* Nicholson and Etheridge. Mon. Sil. Foss. Girvan Dist., Vol. I: 65.

1879 *Calostylis* Zittel. Handb. d. Pal., Vol. I: 241.

1883 *Calostylis* Roemer. Leth. Geog., Pt. I, Leth. Pal.: 393.
1889 *Calostylis* Neumayr. N. Jahrb. f. Min., etc., Pt. II: 44.
1896 *Calostylis* Koken. Leitfossilien: 307.
1908 *Calostylis* Gürich. Leitfossilien: 38.

Calostylis was proposed by Lindström for a peculiar coral in the Silurian of Gothland, Sweden. Lindström, Duncan, and Zittel believed it to belong with the Hexacoralla, while Roemer, Neumayr, and Frech regarded it as an extraordinary development of the Tetracoralla.

Translation of the Original Description.—Composite coral. Lateral buds in a single unilateral series. Septa very numerous, often coalescing. Columella trabecular. Epitheca incomplete.

In Gürich's *Leitfossilien* the genus is described as follows (translation):

Horn-shaped corals of the length of a finger. Upper Silurian of Gothland. They have over one hundred closely spaced septa in apparently several, but really two, cycles of two lengths representing primaries and secondaries. The septa are perforated, a character which, with this one exception, occurs only in the Hexacoralla. The broad central space has a spongy pseudo-[parietal] columella. The exterior has a thin epitheca. This apparent analogy with the structure of the much later occurring Hexacoralla may be considered as a case of parallel development [*Konvergenzerscheinung*] within the wide realm of variation of the Tetracoralla.

The statement that this is the only Paleozoic "perforate coral" is no longer true, as most of the Tabulata are more or less replete with mural pores. Furthermore, Hinde (1889) described genera of the family Archæocyathidæ from the Lower Cambrian among which there are several "perforate" corals. *Archæocyathus* (restricted) has perforated septa; *Coscinocyathus* has perforated transverse plates; *Protopharetra* has porous walls; *Ethmophyllum* and *Spirocyathus* have canal structure in the walls.

LIST OF SPECIES.

Calostylis denticulata (Kjerulf). Genotype.

Clisiophyllum denticulata Kjerulf. Veiviser ved geol. Excursioner i Christiania Omega, 1865: 22, 25.

Calostylis cribraria Lindström. Ofv. K. Svenska Vetensk.-Akad. Förhandl., Vol. XXV, 1868: 421.

Calostylis denticulata Lindström. K. Svenska Vetensk.-Akad. Handlingar, Vol. IX, No. 6, 1870: 1.

Locality and horizon: Near Visby, Gothland, Sweden. Silurian.

Calostylis lindströmi Nicholson and Etheridge.

Mon. Sil. Foss. Girvan Dist., Vol. I, 1878: 65.

Locality and horizon: Penkill, near Girvan, Ayrshire, Scotland. Silurian.

Calostylis(?) andersoni Nicholson and Lydekker.

Man. Pal., Vol. I, 1889: 307, Fig. 189.

Locality and horizon: Shropshire, England. Silurian (Wenlock).

Remarks.—No description by the above authors has been found. The figures in the *Manual of Palæontology,* however, are adequate. Lindström believed that these forms belong with the genus *Helminthidium.*

Calostylis spongiosa Foerste.

Bull. Ky. Geol. Surv., No. 7, 1906: 322.

Locality and horizon: Irvine, Kentucky. Silurian (Waco limestone).

Previous Position.—On account of its porous septa *Calostylis* was at first placed among the Hexacoralla. This was opposed by Neumayr, who made a strong argument based on the facts of geological occurrence of coral groups. He pointed out the absence of perforations in forms of Tetracoralla from Silurian until Triassic time, and as there is no other evidence of Paleozoic forms of this sub-class with perforated skeletons, he was led to believe that this peculiar specialization occurred in the Tetracoralla, perhaps in response to a cause like that which has forced so many of the corals since the Paleozoic to assume a similar character. Other points of less force were made by both sides in the controversy. Those who favored Lindström's view pointed to the peculiar spongy columella, the manner of budding, and the lack of a well defined epitheca, while those favoring the other side directed attention to the external shape as being essentially that of the Tetracoralla, and held that the budding phenomena in this sub-class could lead to such a grouping as that in *Calostylis.*

Grouping of Septa in Early Stages.—None of these arguments was decisive and nothing definite was known of the grouping of the septa in the early stages of growth—the most important fact of all—until the matter was taken up by Frech (1890). A cross-section was figured (Fig. 4) by him showing an arrangement of the septa in quadrants. In the same paper a specimen of *C. denticulata* was figured which shows, on the exterior, diverging lines indicating conclusively a pinnate addition of the septa such as appears in a similar way on the exterior of coralla of the genus *Streptelasma.*

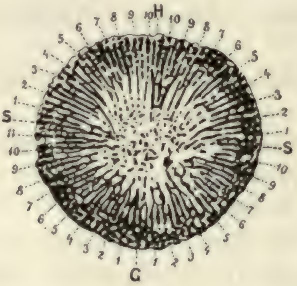

Fig. 4. *Calostylis denticulata.* × 2. (After Frech.)

A specimen of *C. denticulata* in the Yale collections shows this especially well (Pl. I, Fig. 5). It may also be seen, although not distinctly, in two specimens (Cat. No. 42.569) in the United States National Museum. Specimens of *C. lindströmi* from the Girvan district in Ayrshire, Scotland, do not show definite striæ which can be traced far enough to prove such a structure. It has not been seen among a number of specimens of *C. spongiosa* from the type locality, but these are much more irregular in their habit of growth than *C. denticulata* and the external markings are obscured by a more complete epitheca.

A specimen of *C. denticulata* from the type locality was rubbed down at the tip with emery powder and as soon as structure could be seen upon the surface when covered by a film of water, it was polished and photographed (Pl. I, Fig. 6). The original from which the figure was made is mounted upon a slide and is in the Yale collections. It shows undisputable bilateral symmetry and a very plain grouping into four quadrants corresponding with the arrangements of Frech's drawing (Fig. 4, above), but most decisive of all, it shows the pinnate or quadriseptate manner of septal addition which was described by Faurot (1909). This is a structure which has never been described in any of the Hexacoralla but which, so far as present knowledge goes, is universal among Tetracoralla. It is the one unfailing diagnostic character of the Zoantharia Rugosa (= Tetracoralla) as defined by Milne-Edwards and Haime.

Value of Perforations in Classification.—The occurrence of a perforate structure in any of the coral lines was demonstrated by Neumayr to have little classificatory value. A loose usage of the terms "Perforata" and "perforate corals" has unconsciously associated such forms as *Favosites* of the Tabulata, *Calostylis,* and the genera of Hexacoralla Perforata. The family Poritidæ as defined by Milne-Edwards and Haime (1851) contained such diverse forms as *Pleurodictyum* and *Protarea,* as well as the more usual forms of perforate Hexacoralla. Neumayr protested against such a high valuation of porosity in classification, and called attention to the great differences among the forms which had been thus brought together on the basis of an artificial distinction. The term "Perforata" was finally restricted to the Hexacoralla. "The Hexacoralla form a connected series from the most extreme perforate *Alveopora* and *Porites* to the compact *Astræa;* the fundamental character which connects them all is the six-rayed arrangement of the septa. * * *Calostylis* is the only known member of a distinct group of the Tetracoralla. This group had a relation to the main line which was similar to the relation found to-day between the Perforata and Aporosa of the Hexacoralla." (Neumayr 1889 B: 282.)

Neumayr's conclusion has been well supported by further facts, especially the cases demonstrating the principles of parallel development and convergence among the Anthozoa which are forcing the opinion more and more that this group is extremely variable within narrow limits.

Conclusion.—It is believed that the foregoing considerations, especially the isolated geological occurrence, the order of appearance of the septa, and the limited value of porosity in the characterization of the larger groups, warrant a definite removal of the genus *Calostylis* from the Hexacoralla to a separate family, Calostylidæ, of the Tetracoralla.

Other Peculiar Forms Sometimes Called Hexacoralla.

As recent work has emphasized the importance of a six-septal stage in the life history of a tetracoral it is not surprising to find a few species belonging to that sub-class which have only six septa in adult forms.

Battersbyia gemmans from the Devonian of England is exceptional in that some of its buds have six septa while others have a larger number. According to Neumayr (1889 B), the normal calices bear numerous buds on their borders. A part of these buds undergo a process of development like that of the parent; another part never develop more than five or six septa and within these smaller corallites several new ones form by "septal budding," a process which suggests that of fission. The products of the six-septal individuals, curiously, develop into ordinary large corallites with many septa, and like them produce *buds* at their borders. Specimens of this species have not been available, but judging from the illustration (Neumayr 1889 B: 276), there is nothing to suggest a close relationship with Hexacoralla.

Hexaphyllia.—The genus *Hexaphyllia* from the Lower Carboniferous of Europe has also been listed with Hexacoralla. The corallites are long, slender, and prismatic and have but few septa. There is some doubt as to the limits of this genus. Forms agreeing with the original description were once included in the genus *Heterophyllia,* a group which Neumayr (1889 B) considered to be dimorphic, producing corallites with many septa as well as others with only six in much the same way as in *Battersbyia;* but Duncan (1867: 644) in redefining the genus *Heterophyllia* concluded that the small individuals belong to another and distinct species.

A. Stuckenberg (1904) found specimens of the small six-septal forms in Russia at the village Ploskaja on the left bank of the river Pronja. For these he made a new genus *Hexaphyllia,* basing it upon the single species *H. prismatica* defined at the same time. As the genus now stands it contains also *H. m'coyi* (Duncan), *H. lyelli* (Duncan) and *H. mirabilis* (Duncan), species formerly included in the genus *Heterophyllia.*

Heterophyllia.—Specimens of *Heterophyllia* cf. *sedgwicki* Duncan from the Scottish Lower Limestone Group (Lower Carboniferous), Dunfermline, Scotland, give clear evidence that this genus follows the law of septal addition which is characteristic of Tetracoralla. The calices are rarely preserved, for in ten specimens examined only one showed the distal septal ends but this one showed very clearly a division into quadrants. This specimen is shown on Pl. I, Fig. 7. The septal arrangement is indicated clearly in only one quadrant because of injuries to the polyp which affected all except that region of the calyx. A section made of one of the smaller specimens (Pl. I, Fig. 8) also shows a division into quadrants as well as the typical quadriseptal arrangement. It is noteworthy that the external ridges of this corallite do not alternate with the septa but are opposite the external septal ends.

Specimens of *Hexaphyllia m'coyi* (*Heterophyllia* Duncan) from the Scottish Lower Limestone Group at Gilnockie near Canonbie, Scotland, correspond closely to those described by Stuckenberg. Their mode of attachment is unknown as the fossils invariably occur as broken sections of the prismatic corallum. These sections vary from less than 1 mm. to 2 mm. in diameter. Neumayr (1889 B: 277) suggested that these six-septal forms were related to the large individuals of *Heterophyllia* in a way similar to that in dimorphic individuals of *Battersbyia.*

Duncan, however (1867: 645, 646), made separate species for the six-septal forms. He divided the genus *Heterophyllia* into two groups, one containing large forms with many septa, and one including small corallites with six septa. Eight species were described by him, three of them being forms with only six septa,—*H. m'coyi, H. lyelli,* and *H. mirabilis.* The genus was redefined by Duncan as follows:

"The corallum is simple, long, and slender. The gemmation takes place around the calicular margin, and is extracalicular. The septa are either irregular in number and arrangement, or else are six in number and regularly spaced. The costæ are well developed, and may be tubercular, spined, and flexuous. The wall is thick, there is no epitheca and the endotheca is dissepimental."

Another form so closely related to the three six-septal species of *Heterophyllia* that it must be placed in the same genus, was found by Stuckenberg (1904) in central Russia. Upon this species, *H. prismatica,* he based a new genus *Hexaphyllia* which, he indicated, should also contain the six-septal forms of *Hetero-*

phyllia. The generic characteristics of *Hexaphyllia* are, therefore, the prismatic to cylindrical corallites, having thick walls and regularly spaced septa that unite in the center. The chief difference from *Heterophyllia* is the regular arrangement of the septa. Completely formed tabulæ occur in *Hexaphyllia prismatica.* Stuckenberg adds, "*Heterophyllia m'coyi* and *Heterophyllia lyelli* evidently belong in this genus."

Forty specimens of *Hexaphyllia* cf. *m'coyi* from the Scottish Lower Limestone Group, Gilnockie, near Canonbie, Scotland, have been examined. They are all broken segments of corallites, prismatic or cylindrical in shape. Many of them, especially the larger ones, show the internal structure clearly when polished with emery powder. They correspond closely to the definition of the genus as given by Stuckenberg, but their reference to Hexacoralla is not so clear.

The adult corallites show six septa quite equally spaced but younger stages indicate that their mode of introduction is that of Tetracoralla. Such a stage is shown in Pl. I, Fig. 9. The bilateral symmetry is plainly indicated and the septal arrangement clearly suggests the occurrence of an earlier stage of growth with but four septa. However, even though the size of the specimens is very inconstant, there is no section in the many that were made that shows only four septa; on the other hand, in several adult specimens the six septa meet at equal angles at the center. Several of the smaller sections, however, showed the junction of the third and second pairs of septa considerably farther from the center than in the specimen shown in Pl. I, Fig. 9. In these the arrangement is more symmetrical and it often is difficult to tell which arm of the Y formed by the septa of the second and third bilateral pairs is the younger. The number of septa is not large enough to show whether or not the addition of septa obeys the quadriseptal rule of Faurot. The arrangement of these six septa is that so characteristic of Tetracoralla. The arrangement of septa in these Scottish specimens of *Hexaphyllia* therefore points to a relationship to Tetracoralla.

Among the specimens of *Hexaphyllia* there were found several extremely small cylindrical individuals with thick walls and without septa which were at first thought to be young individuals of this genus, but as there were no gradations in structure between them and the six-septal forms, although the latter showed considerable range in size, it is now held that they are generically distinct.

Summary of "Paleozoic Hexacoralla."

From the above discussion it will be seen that a re-examination of the "Paleozoic Hexacoralla" has led to the conclusion that *Calostylis, Heterophyllia, Hexaphyllia,* and *Battersbyia* are genuine Tetracoralla and that the genus *Palæacis* is a tabulate of the family Leptoporidæ. Compound forms like *Axinura* and *Pachyphyllum,* at first sight closely resembling Hexacoralla, prove upon closer examination to have the bilateral symmetry and arrangement of Tetracoralla. A further discussion of these and similar genera is not attempted here, as their tetracoral nature may be easily ratified by examining the many illustrations of cross-sections which are available among the works of Rominger, Lambe, Nicholson, and A. Vaughan. The final conclusion from available data is that there are no known Paleozoic Hexacoralla.

First Fossil Corals.

Mackenzia of the Middle Cambrian.

Excepting some forms of uncertain relationship comprising the family Archæocyathidæ, of wide distribution in the older Cambrian, nothing is known of stony corals earlier than the Middle Ordovician (Chazy). On the other hand, a soft-bodied form, *Mackenzia,* which may have some relation to the Anthozoa, has been described by Walcott (1911) from the Middle Cambrian of British Columbia. There are only two specimens known of this remarkable fossil and great doubt exists as to its relationship. It was at first placed among the Holothuroidea, while in Zittel-Eastman (1913) it was suggested that it may be an actinian closely related to *Edwardsia.* There is no calcareous matter now present in the specimens, but the suggestion was made by the author of the genus that "nearly all calcareous matter was removed by solution in the mud deposit prior to its consolidation and alteration into rock." The presence of an *Edwardsia*-like organism in the Middle Cambrian is a matter of great significance because of the conclusion reached by Bourne, Brown, and others that the original stock from which the Anthozoa descended was one in which eight mesenteries occurred in the adult. This conclusion is supported by the fact that an early ontogenetic stage with only eight mesenteries, commonly referred to as the *Edwardsia* stage, has been found in many lines of the Anthozoa.

First Coral Fauna.

Undoubted forms of the class Anthozoa representing the subclasses Alcyonaria, Tabulata, and Tetracoralla of the Zittel-Eastman classification have been found in the lower part of the Middle Ordovician. The first of these groups to appear are the Alcyonaria (Octocoralla) represented by *Stylaræa parva* (= *Tumularia parva* Robinson 1916) and *Fletcheria incerta*. *Tumularia parva* is found near the base of the Middle Ordovician (Chazy) of the Lake Champlain-Montreal area and the Mingan Islands, and in the higher Stones River series of Virginia and Tennessee. *Fletcheria incerta* is also found in the Chazy of the above mentioned Canadian localities. *Tetradium syringoporoides* and *Columnaria alveolata* are other compound corals found in the Stones River series and represent respectively the Tabulata and the Tetracoralla. *Columnaria alveolata* continues into the later Ordovician formations, where it is associated with a number of other individual and colonial Tetracoralla.

From the above facts it is apparent that at the time of their first appearance as fossils in the Middle Ordovician the Anthozoa were already differentiated into three great groups, the subclasses Alcyonaria, Tabulata, and Tetracoralla. The origin of these widely differentiated stocks must surely have occurred much earlier in the Ordovician and most probably well back in the Cambrian.

Probable Ancestry of the Tetracoralla.

There are two species of cup or individual Tetracoralla of the Black River faunas so extremely different in their specialization that they also suggest a long unrecorded history for that subclass. These are *Streptelasma profundum* and *Lindstrœmia whiteavesi*. The extremes of variation which they represent are almost as great as may be found between any two members of the sub-class and the problem of distinguishing the more primitive specialization must be attacked in other ways than by a comparison of adult characteristics.

A strict comparison of the life histories of these two species cannot be made as yet, since *Lindstrœmia whiteavesi* is known only from a single specimen (Foerste 1906: 312). On the other hand, Brown (1909) made a detailed study of the development of *Streptelasma profundum* and found in siliceous specimens a peculiar early growth of the skeleton which is different from that of any other of the Tetracoralla yet investigated. He held that the genus in its earliest growth was devoid of septa. In a specimen from 1 to 2 mm. in length, he found no septa, the individual evidently having secreted a calycinal wall before any folds had developed in the basal disk. These young coralla were merely hollow cones with smooth inner walls. A little higher up in the calyx four septa appear at once, but these are not plates dividing the calyx into compartments, as is true of the Tetracoralla generally, but are low ridges in the cup. Succeeding ridges are added in bilateral pairs, until a stage with twelve septa is attained (Brown, 1909: 55, Fig. 2). After this stage of growth the septal ridges become more prominent, are raised into lamellar ridges, and finally, when eighteen septa are present, unite in the center of the calyx. In no other of the Tetracoralla has a skeletal growth been found without septa. This anomalous condition could have been brought about through fossilization. The specimens which Brown studied were all siliceous, *i. e.,* pseudomorphs, and the shortness of the septa may have been due to imperfect silicification. It was shown, however, that the septa still preserved delicate, thin edges, a fact which may lead to the idea that resorption of the skeleton took place during adult life. This process, nevertheless, does not appear to have been one operating upon the skeleton of Tetracoralla, for in all the other genera examined the early septa are complete.

Hypothetical genus Protostreptelasma.—Brown established an hypothetical genus with the characters of an early stage in *Streptelasma profundum.* He named this genus *Protostreptelasma,* "a rugose coral having a hollow conical or horn-shaped calyx, straight or slightly curved, without septa or having only a few rudimentary ridges near the margin indicative of septa." Such a genus was considered to be the ancestor of the *Streptelasma* line.

The description of *Protostreptelasma* indicates a corallum of simpler structure than is known even in early youth among the

Zaphrentidæ, although an approximation to it is characteristic of certain of the Cyathaxonidæ, typically of *Petraia,* in which the septa, even in adult forms, do not reach the center of the deep calyx. From the study of early stages of a large number of Zaphrentidæ and Cyathophyllidæ, it has come to be recognized that the development of the young of Tetracoralla has either two, four, or six septa, all of which are complete and meet at the center. If an ancestral genus were deduced from the ontogeny of these forms it would be characterized by two or more complete septa instead of by a few rudimentary septal ridges. A strict analogy with the post-larval development in modern forms would add the further conception of an earlier disk-shaped corallum with a few complete septa. There is proof that such a condition actually existed among Tetracoralla as well as among Hexacoralla. The writer examined several specimens of *Pachyphyllum woodmani* collected by C. O. Dunbar from the Upper Devonian (Lime Creek) of Iowa, and found in them two small colonies which were cemented to the convex surface of fragments of large brachiopod shells. By slowly etching the inner surface of the shells with dilute hydrochloric acid the structure of the protocorallite in contact with the shell could be seen. As indicated in Plate I, Figure 10, the whole colony diverges from a minute circular attachment such as a hemispherical or disk-shaped sessile protopolyp might secrete and very similar to the first lime-secreting stages described by Duerden (1904) for *Siderastræa* and by Mavor (1915) for *Agaricia.*

The writer has found in his examination of abundant material of *Streptelasma* from various Ordovician localities that the earliest growth does not suggest a stage without septa. If such a one was present as that described for *S. profundum* and then was so speedily lost in later forms that it does not appear in the succeeding species, *S. corniculum* and *S. rusticum,* it may be seriously questioned whether it has phylogenetic significance. Figures 5 *b* and 5 *c* give conclusive evidence that *S. corniculum* has a life history like that of other Tetracoralla and not like that indicated by Brown for *S. profundum.*

As far as the present data go the hollow cone described by Brown as being the first stage in the skeleton of *S. profundum* is an exceptional and improbable condition among the Tetracoralla. We can readily conceive such a primitive structure to have been present, but if in all the other forms of this sub-class the youngest skeletons are found to be equipped with several *complete* septa, the contention may reasonably be made that such a condition should be found in the ancestral forms. The question would thus be whether in postulating an ancestral genus the more weight should be given to one of two very different forms representing the first known members of the line of tetracorals or to an ontogenetic formula which is found in all except one of the tetracorals so far investigated. In the opinion of the writer the finding of *Lindstrœmia whiteavesi* side by side with *Streptelasma profundum* lessens the significance of geological occurrence in this case. It seems more reasonable to assume that the siliceous pseudomorphs have failed to preserve the entire structure of S. *profundum* accurately, and to trust the unvarying ontogenetic stages to reveal the history of the phylum.

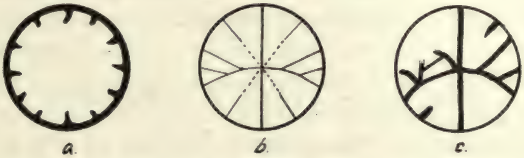

Fig. 5. The twelve-septal stage in *Streptelasma profundum* (*a*), after Brown; in *S. corniculum*, (*b*) diagram, (*c*) actual specimen. × ⅔.

Dominance and Decline of Various Coral Stocks.

The three sub-classes, Alcyonaria (Octocoralla), Tabulata, and Tetracoralla, which appeared in the Ordovician, became important members of the later Paleozoic faunas. The Alcyonaria continued with increasing importance throughout the Ordovician and Silurian and reached a maximum of development in the Silurian, although they survived the period of stress at the close of the Paleozoic and are represented in the living coral faunas. The Tabulata became very important in the faunas of the Silurian and Devonian due to the remarkable development of the Favositidæ and Halysitidæ. In the Mississippian they became an inconspicuous group and disappeared before the end of the Paleozoic. The Tetracoralla were the most conspicuous of Paleozoic corals, beginning in late Ordovician and reaching a maximum in the Middle Silurian and Devonian. They continued as a vigorous line in the Mississippian, as the great coral reefs in England and western Europe testify, for the variation of forms in these localities is almost as great as that of the Devonian reefs in North America such as those of Alpena and Petoskey, Michigan, and the Falls of the Ohio at Louisville, Kentucky. In Permo-Carboniferous time a great restriction took place and the number of individuals as well as of genera was greatly reduced. With the end of the Permian record the history of the Tetracoralla closes, although some peculiar Triassic and Júrassic forms have been found to possess a few of their characteristics. No case has yet been recorded, however, of a Mesozoic or recent coral in which the tetracoral septal addition follows the laws of Kunth and Faurot.

Evolutionary Trends in Tetracoralla.

Lower Paleozoic.—The different families of the Tetracoralla were in the main established by the Middle Silurian. The Palæocyclidæ and Cystiphyllidæ seem to have been aberrant lines which transgressed the limits of favorable variation and so were destroyed. The Palæocyclidæ occurred in the Silurian and Devonian; the Cystiphyllidæ began in the Silurian and continued into the Carboniferous. The Cyathaxonidæ were the most conservative of all the families of Paleozoic corals, following the same pattern from the Ordovician genus *Petraia* to *Polycœlia* of the Permian (Zechstein), and also show an evidence of a lack of progressive variation, or, possibly even a retrogradation, in the Permian, in that *Polycœlia* corresponds more closely to the original pattern of *Petraia* than do the Devonian members of the family. This is therefore obviously not a family from which a new stock should be expected to arise in the early Mesozoic. The two remaining families, the Zaphrentidæ and the Cyathophyllidæ, were the only ones which approached the end of the Paleozoic with the probability of survival. Both of these vigorous lines began in the Ordovician; gained a maximum of development in the Silurian which was sustained through the Middle Devonian, and both continued to produce important variations during the growth of the Lower Carboniferous coral reefs.

Permian.—The fate of these stocks in the cold waters resulting from the early Permian glaciation can only be conjectured. Their latest recorded occurrence is in the Permian of the great medial sea Tethys, where the individuals are common and apparently are confined chiefly to the Asiatic area. *Polycœlia* is the single well defined genus of the western and northern Permian sea of Zechstein time in western Europe and England. According to Waagen *Lonsdaleia* and *Amplexus* are found in the Permo-Carboniferous beds of the Salt Range of India and *Zaphrentis, Clisiophyllum,* (?) *Dibunophyllum,* and *Pterophyllum* have been reported from the Chitichun of the central Himalayas. The restricted number of genera in these localities can only in part be accounted for by the lack of adequate preservation, for reef-building forms occur abundantly. Other forms occur in Australia and New Zealand. This fact shows that in what appears to be their last stronghold, Tethys, the Tetracoralla were losing ground in point of numbers of genera, and that this decline was far more advanced in the cooler western and northern waters than in those of the eastern medial region. With regard to later occurrences, the evidence appears to be in favor of an earlier abundance of Triassic forms in western than in eastern Tethys, for it is the Alpine region in which the new forms first attain a vigorous reef-building character. The great gap in the record of coral evolution therefore comprises all late Permian and early Triassic time, and this absence of material does not permit a study of the evolutional relations of these stocks, but it is certain that in the Middle Triassic the new forms, now Hexacorals, were conspicuous in the West, while it was not until the Jurassic that they appeared in large numbers in the East. This fact is suggestive rather than demonstrative of a western Tethyian origin for the Hexacoralla.

PLASTICITY OF TETRACORALLA IN THE LATE PALEOZOIC.

In the preceding discussion it has been shown that there are none of the so-called Paleozoic Hexacoralla that may not more definitely be placed in other sub-classes. It will next be pertinent to investigate the variability of late Paleozoic Tetracoralla, since the facts of geological occurrence clearly point to the theory of direct descent of the Hexacoralla out of the former as the more probable source. If the phylum has assumed, by the end of the Paleozoic, a pattern from which only slight variations occur, it may be possible to show that the variation is too limited to give rise to new forms. If the stock is no longer vigorous, how may it be expected to survive the increasingly desperate trials of vitality to which it is destined because of the cold waters of the Permian? On the other hand, if there is evidence of an unstable variation, producing giants and monstrosities, we may then look for the end of the phylum.

The Columella as an Example of Variability.

There is one point of structure in which the late Paleozoic corals quite generally depart from the patterns established in earlier times. This is the presence of a columella, the most characteristic evolutional tendency of the last great coral assemblage, the Lower Carboniferous coral reefs of western Europe. Since the columella is nearly always present in some form in Carboniferous corals, it may be taken as the measure of their variability. In order to judge of this, we may, therefore, take under consideration the morphological and physiological significance of the columella.

Morphological Significance.

Milne-Edwards defined a columella simply as a central column. Four kinds were distinguished:

1. False columella (pseudo-columella). Caused by a twisting of the inner ends of the septa.

2. Septal columella (columella septalis). A fasciculate column composed of pali or similar structures.

3. Parietal columella (columella parietalis). A spongy central mass.

4. Essential columella (columella propria). A separate unit of structure continuous from early stages to old age. It may be styliform, fasciculate, or lamelliform.

Classes 1, 2, and a part of class 3 fall into one group because the structure of the central column is always connected with structures outside of the central pit. Class 4 and the remainder of class 3 contain those forms which are independent central structures that do not involve any of the skeleton outside of the central pit. In order to express this difference Gregory (1900) has extended the term "parietal columella" to include classes 1, 2, and a part of class 3 of Milne-Edwards. Accepting this change the terms will be used in the following sense in the present paper:

1. *Essential columella* (true columella). One that develops independently of other calicular structures. It may be styliform, lamellar, or fascicular. It is usually compact or solid. (See Fig. 6*c*, page 193.)

2. *Parietal columella* (false columella, septal columella, pseudo-columella). One that is formed by a specialization of one or more septa or septal appendages. Such specializations are:

a. Enlargement of the inner end of a single septum. (See Fig. 6*b*, page 193.)

b. A central twisting of the inner septal ends.

c. A development of large pali.

d. The secondary deposit of calcium carbonate which usually obscures somewhat the origin in cases b and c.

A parietal columella may be compact or spongiose, fasciculate ("paliform"), styliform or lamellar.

Although forms with columellas appear as early as the Middle Ordovician (Black River) in *Lindstrœmia whiteavesi,* the time of their greatest development is the Lower Carboniferous (Mississippian), and corals with columellas have been an important element ever since. While they have thus become more numerous in the later development of corals, suggesting that such a structure is of some decided advantage, it is not obvious what particular importance it could have had in the physiology of the polyps. As a part of the stony calyx, the essential columella is a sub-structure secreted by the basal disk. If its function should have been that of anchorage of the internal structures there might be no direct evidence of the attachment which evidently in modern corals is more a case of intimate intergrowth of the ectoderm and skeleton than an attachment in particular localities by ligaments or muscle endings.

Ogilvie (1897: 295) noted that in forms with a prominent columella the lower part of the column and the circle of mesentery ends form a trench, thus affording a somewhat more sheltered situation for the gonads, which are attached to the lower part of the mesenteries, than a flat-floored cavity would offer. Whatever functions other than a central support or anchorage the columella may have had, it invariably indicates an invagination of the basal disk. It is a secretion in the ectoderm and as such could never have pierced the basal disk and come into direct contact with the internal organs. It has also been suggested by Ogilvie that the columella of recent corals may be looked upon as a specialization of the tabulæ of Paleozoic forms. Those early Paleozoic forms which had the least support from below, such as *Streptelasma* and the Cyathaxonidæ, seem to have been especially liable to form columellas. On the other hand, those forms with well developed tabulæ, as in *Zaphrentis,* were less liable to form them. In the late Paleozoic, columella formation seems to be more or less correlated with the development of many septa as though it were representative of or the result of crowding.

Steps in Development.

Siderastrea.—Duerden in his study of *Siderastrea radians* (1904) has indicated the following steps in the development of an essential columella:

1. The columella is not seen until ten or twelve septa have appeared.

2. The first evidence of a central structure is the appearance of a few granules or knobs on the smooth central area of the basal disk. This may be accompanied by a thickening of the ends of one or two septa or by the development of several spinose growths from the septal ends.

3. Later on more knobs and spinose growths appear and a secondary infilling of calcareous matter makes the whole structure compact. This process of calcification of the loose structure

already formed often obscures the mode of formation, a difficulty that is met with in examining the adult forms of *S. radians.* Ogilvie thought the term "paliform pseudo-columella" to be applicable, and it was only from a detailed morphological study of all stages in the development that the columella of *S. radians* could be decided definitely to be an essential columella. In transverse section it is most often round, but sometimes is oval, with its long diameter in the direction of the directive mesenteries.

Cyathaxonia.—Among Paleozoic forms, *Cyathaxonia* has an essential columella, the developmental stages of which are indicated by Carruthers (1913) and may be briefly summarized as follows:

1. The columella is seen first at the time when eight or nine septa have appeared. The first septa meet at the center without any noticeable axial thickening.
2. The columella quickly attains prominence as a structure independent of the septa and tabulæ.

The beginning of the columella cannot be independent of the septa in this case as the latter meet at the center, therefore there is a stage in the life history of *Cyathaxonia* at which the columella is parietal.

Lophophyllum.—*Lophophyllum* has a parietal columella of the lamellar type. It is never independent of the septum, from which it is an outgrowth, although it sometimes becomes styliform and projects as much as half an inch above the bottom of the calyx. This styliform aspect may be seen in *Lophophyllum tortuosum* (= *L. konincki* Milne-Edwards and Haime). When lamellar, its long axis lies in the direction of the cardinal and counter septa. It is usually a continuation of the counter septum, but sometimes the cardinal and other septa are involved. The youngest stage figured by Carruthers shows twenty-seven septa and has a well formed columella.

Aulophyllum.—Stanley Smith (1913) has described in detail the morphology and ontogeny of the genus *Aulophyllum.* This description clearly indicates the development of an essential columella. The process is as follows:

1. Six septa meet at the center.
2. A zaphrentoid stage in which the septa meet and coalesce at the center.

3. The septa separate from their medial junction and in the central area thus formed a columella develops as a vesicular mass of calcium carbonate. The septa are not wholly disconnected from the columella, but their reduced edges form a fringe of lamellæ around it. The columnar vesicles are represented at first by simple arched tabulæ. This stage enters at the time when about twenty septa have formed.
4. The septa become completely separated from the columella.

This is an example of an essential columella which shows even in old age its origin in central tabulæ and vesicles, without any obscuring of them by a later secondary infilling of calcium carbonate. Here too, however, there is a stage in which the columella may be called parietal, although many septal ends take part in its formation rather than one as in *Lophophyllum*, or a few as is probably the case in *Cyathaxonia*.

Both essential and parietal columellas are the results of an invagination of the basal disk. It is not even necessary to postulate an increase of secretion of calcium carbonate at the center to account for the rapid upbuilding of this part of the skeleton, since a central invagination in itself tremendously increases the area of lime-secreting tissue.

In the cases mentioned above the columella is evidently the result of such an invagination of the basal disk. This may have been in response to an upward pull at the center such as would result from an attachment of the lower ends of the mesenteries. In the case of the lamellar parietal columella of *Lophophyllum* the force acted most effectively at two opposite points of the polyp, causing an elongated invagination coinciding in direction with a septal element. This led to a continuous lamellar plate, the product of the fusion of a septum and the columella proper. The septum involved is the counter septum, a fact suggestive of the opinion held by various authors that the major septa lie in the direction of the directive mesenteries.

While the formation of all columellas is probably caused by some physiological necessity, the result of which we see in an invagination of the basal disk, there is yet a real distinction in a morphological sense between parietal and essential forms. The distinctive feature is the amount of influence the arrangement and form of the septa exert upon the columella of the adult. In the case of *Aulophyllum,* while there is a stage in which the septal ends are involved in the columella, they are always clearly distinct from it. Likewise in *Cyathaxonia* (Fig. 6), although the earliest stage of the columella must actually rest upon the central junction of the septa, these do not become involved but rather are excluded very quickly from the central area by the growing columella. In *Lophophyllum,* on the contrary, from the earliest stage until old age, the orientation, shape, and size of the columella are noticeably affected by a septum. In the case of parietal columellas which are actually crowded septal ends or appendages of septa, the distinction from the essential columella is so obvious that there is no danger of confusion.

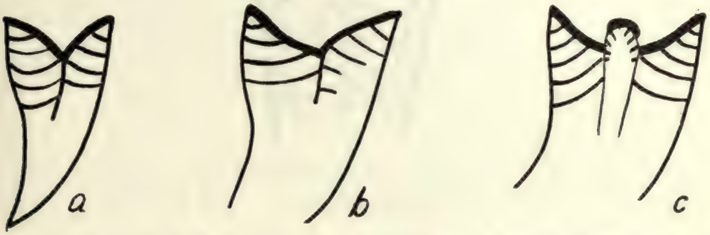

Fig. 6. Longitudinal sections: *a*, *Zaphrentis*; *b*, *Lophophyllum*; *c*, *Cyathaxonia*. Heavy black shows areas of secretion of calcium carbonate. Nat. size. (After Carruthers.)

The genus *Aulophyllum* is a fine example of the versatility of columella variation. Not only do the size, shape, and compactness of the columellas vary in different specimens, but they are also extremely variable from time to time in the life of the same individual. This shows a sensitiveness to minor changes in the life processes which limits the value of columellar variation in classifying the larger groups of corals.

Lonsdaleia.—The parietal columella of *Lonsdaleia* has been figured and described by Stanley Smith (1916). It is a large central column such as is found in the Clisiophyllids generally. It appears rather late in the life of the individual, when there are about twenty major septa. At this time, either a group of tabellæ is formed or the tabulæ are drawn up into a peak at the center (see Fig. 7). As the development proceeds, the tabulæ are broken up altogether at the center and a large number of tabellæ form. Within the mound formed of tabellæ, there is a plate corresponding in direction to the cardinal and counter septa. It is derived from the counter septum. This axial plate is usually separated from the counter septum later in the life of the individual, but sometimes a connection is preserved until adult conditions are reached. Other lamellæ develop corresponding to the major septa, and still others arise independently. The cross-section of a columella of this sort gives the pattern of a cobweb, which is a characteristic of this and related genera. The presence of the continuation of the counter septum as an axial plate in the columella and its evident influence upon columellar development place this form in the group of parietal columellas. Accordingly, the ontogenetic history of a coral individual is summarized by Smith as follows:

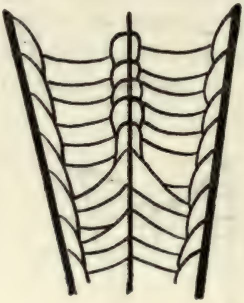

Fig. 7. *Lonsdaleia.* Longitudinal section of a single corallum, showing tabulæ, tabellæ, columella, and dissepiments. (After Smith.)

"1a. The epithecal ring [basal plate] is laid down.

"1b. The earliest septa appear attached directly to the epitheca.

"2a. The counter septum grows into the middle of the corallites.

"2b. The dissepiments appear as a narrow peripheral zone, and may, even at this stage, separate the septa from the epitheca.

"3. During this third stage the septa are prolonged into the middle of the corallite and the tabulæ bending distally around the inner or 'axial' edges thus form the beginning of the central column. Truncation of the inner edges of these long septa takes place, and gives rise to the first septal lamellæ. * * * *

"4. At this stage the axial tabellæ are formed, and the central column assumes its true character. The extrathecal region is narrow, and many of the septa are still in contact with the epitheca."

Summary.

The appearance of a columella in nearly all the late Paleozoic genera of Tetracoralla shows that this line was still a variable one. The cause which effected this widespread change must have been some important alteration in function or structure in the center of the polyp. The different forms of both parietal and essential columellas indicate some such common underlying change. Finally, it is considered to be significant that this central structure, which is so common in Mesozoic and later genera of Hexacoralla, appeared so often in the tetracoral line just before the Permian-Triassic gap in the record which separates the two groups.

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PLATE I.

Fig. 1. *Palæacis cuneiformis.* A series of individuals showing alternate bilateral budding. × 2.

Fig. 2. *Palæacis obtusa.* View of the calices of a mature corallum. The lowermost in the figure is the oldest, and was followed successively by the uppermost, the one at the left, and the one at the right. × 2.

Fig. 3. *Palæacis obtusa.* Transverse section showing canals (white), radiating fibres, and infiltration of silica and pyrite (black). × 8.

Fig. 4. *Microcyathus depressus.* Transverse section showing skeletal structure, openings of canals into interior cavity, and calicular ridges. × 8.

Fig. 5. *Calostylis denticulata.* A corallum which shows the pinnate arrangement of septa. Nat. size.

Fig. 5a. A detail of the same specimen. × 2.

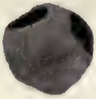
Fig. 6. *Calostylis denticulata.* Tracing of a microphotograph showing quadriseptate arrangement of septa in the upper (cardinal) quadrants. × 11.

Fig. 7. *Heterophyllia* cf. *sedgwicki.* View of a calyx which shows an imperfect quadriseptate grouping of the septa. × 4.

Fig. 8. *Heterophyllia* cf. *sedgwicki.* Retouched photograph of a transverse section showing a complete quadriseptate group in the lower right-hand quadrant. × 7.

Fig. 9. *Hexaphyllia* cf. *mccoyi.* Transverse section showing bilateral symmetry. × 8.

Fig. 10. *Pachyphyllum woodmani.* View of attachment surface of colony showing a tracing of the protocorallite with four septa. × 5.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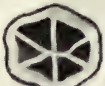
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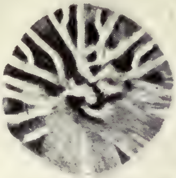
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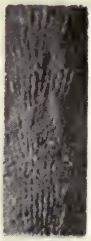
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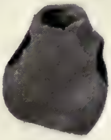
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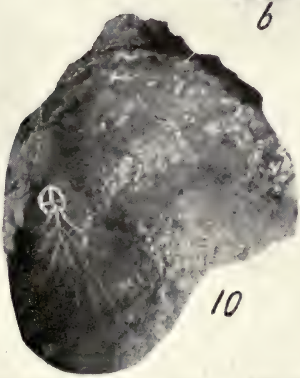
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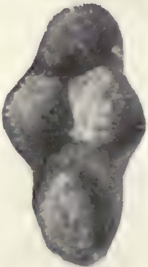
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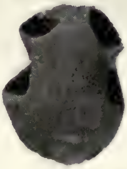
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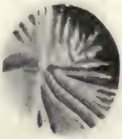
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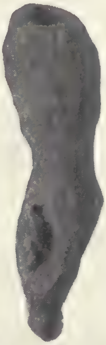
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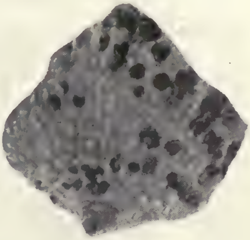
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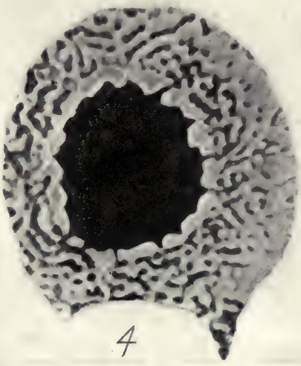
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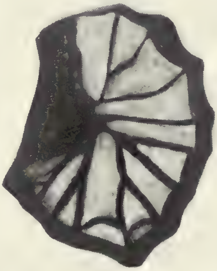
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TRANSACTIONS OF THE
CONNECTICUT ACADEMY OF ARTS AND SCIENCES
INCORPORATED A. D. 1799

VOLUME 21, PAGES 201-313 MARCH, 1917

The American Species of Marchantia

BY

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NEW HAVEN, CONNECTICUT

1917

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I. INTRODUCTION

The genus *Marchantia* is almost world-wide in its distribution and includes some of the largest and most conspicuous of the Hepaticae. According to the current rules of nomenclature the genus was not definitely established until 1753, when Linnaeus published it in the first edition of his Species Plantarum, but the use of the name *Marchantia* dates from the year 1713. Linnaeus recognized seven species, only the first two of which, *M. polymorpha* and *M. chenopoda,* are now retained in the genus. The type species, *M. polymorpha,* he cites from Europe only, and gives Martinique as the habitat of *M. chenopoda.* At the present time *M. polymorpha* is known to be almost cosmopolitan, while the range of *M. chenopoda,* although apparently restricted to tropical America, is likewise very extended.

For a long time *M. polymorpha* was the only species recognized in Europe. In 1817, however, a second species, *M. paleacea,* was described by Bertolini[1] from material collected in Italy. This species had been distinguished and figured by Micheli[2] nearly a century earlier but had not been accepted by Linnaeus. It is now known to have a wide distribution in tropical and subtropical regions, its range extending far beyond the confines of Europe. Other European species which have been proposed from time to time, such as *M. macrocephala* Corda and *M. Sykorae* Corda, have never received wide acceptance and undoubtedly represent mere forms of *M. polymorpha.*

The history of the genus in America, when the entire continent is considered, is very much involved. This is due partly to the full representation of the genus and partly to the confusion which has arisen in the interpretation of certain species. Before the publication of Gottsche, Lindenberg and Nees von Esenbeck's Synopsis Hepaticarum, in 1847, the following species of *Marchantia* had been recorded from North and South America: *M. papillata* Raddi (1823) from Brazil, *M. platycnemos* Schwaegr. (1827) from Brazil, *M. Swartzii* Lehm. & Lindenb. (1832) from Jamaica, *M. squamosa* Raddi (1832) from Brazil,

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[1] Opus. Sci. Bologna 1: 242. 1817.

[2] Nova Plant. Gen. 2. *pl. 1, f. 4.* Florence, 1729.

M. cartilaginea Lehm. & Lindenb. (1832) from St. Vincent, *M. brasiliensis* Lehm. & Lindenb. (1832) from Brazil, *M. Berteroana* Lehm. & Lindenb. (1834) from Juan Fernandez, *M. domingensis* Lehm. & Lindenb. (1834) from Santo Domingo, *M. tholophora* Bisch. (1835) from Mexico, *M. inflexa* Mont. & Nees (1838) from Martinique, *M. plicata* Nees & Mont. (1838) from Bolivia, *M. quinqueloba* Nees (1838) from the West Indies,[3] *M. peruviana* (Nees & Mont.) Nees (1839, as *Grimaldia peruviana*) from Bolivia. In the Synopsis Hepaticarum these species are all recognized with the exception of *M. Swartzii,* which is made a synonym of *M. chenopoda,* and *M. platycnemos,* which is made a synonym of *M. papillata.* Two other species, *M. pusilla* Nees & Mont. from Chile and *M. lamellosa* Hampe & Gottsche from Venezuela, are described as new; a third species, *M. linearis* Lehm. & Lindenb. (1832), originally described from Nepal, is quoted from several of the Lesser Antilles; while both *M. polymorpha* and *M. chenopoda* are cited from numerous American localities. The Synopsis, therefore, recognizes sixteen species in all from North and South America.

During the period from 1847 to 1899 comparatively little was added to our knowledge of the genus in America. The following species, however, were described as new: *M. flabellata* Hampe (1847) from Venezuela, *M. Notarisii* Lehm. (1857) from Chile, *M. Dillenii* Lindb. (1883) from Jamaica, *M. subandina* Spruce (1885) from Peru, *M. Beschercllei* Steph. (1888) from Brazil, and *M. oregonensis* Steph. (1891) from Oregon. Two of the most noteworthy papers on *Marchantia* appearing during this time were by Schiffner. In the first he brought out the fact that *M. brasiliensis* and *M. cartilaginea* were synonyms of *M. chenopoda*[4]; in the second he showed that *M. tabularis* Nees, a South African species, was a synonym of the older *M. Berteroana.*[5] Another reduction to synonymy was suggested by Howe,[6] who showed that *M. oregonensis* was based on very uncertain characters and that it could not be well separated from *M. polymorpha.*

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[3] No station is cited for this species in the original publication; the Synopsis, however, gives, "in India occidentali."

[4] Nova Acta Acad. Leop.-Carol. **60**: 287, 288. 1893.

[5] Oesterr. Bot. Zeitschr. **46**: 41-44, 100-103. 1896.

[6] Mem. Torrey Club **7**: 62. 1899.

In 1899 Stephani[7] published his monograph on *Marchantia* in the first volume of his Species Hepaticarum. He describes eighteen species in all from America, six of which are confined to North America and eight to South America. Of these eighteen species *M. Elliottii* of Dominica and *M. caracensis* of Venezuela and Mexico are described as new, while *M. cephaloscypha* Steph. (1883), originally described from New Zealand, is quoted from Chile and Patagonia. He accepts Schiffner's reduction of *M. cartilaginea* to synonymy but maintains both *M. brasiliensis* and *M. oregonensis* as valid. Under *M. tabularis* he cites *M. Berteroana* as a synonym (on the authority of Schiffner) but gives no American localities. Under *M. domingensis* he gives *M. inflexa* as a synonym and states further that the American stations for *M. linearis* (as given in the Synopsis) belong to *M. domingensis* instead. He includes *M. Dillenii* among the synonyms of *M. chenopoda* and considers that *M. peruviana* and *M. Notarisii* are very close to this species and may be merely forms of it. Two species recognized by the Synopsis, *M. quinqueloba* and *M. pusilla,* he gives up altogether, because they were based on fragmentary specimens, and he makes no mention whatever of *M. flabellata.*

If *M. Berteroana* is reinstated as an American species and if *M. flabellata* is added, Stephani's total of eighteen species would still be maintained, even if *M. brasiliensis* and *M. oregonensis* are considered synonyms. It will be seen that this total is scarcely different from the total of sixteen species given in the Synopsis Hepaticarum. The writer hopes to show, however, that these numbers are much too high and that further reductions to synonymy are necessary. In his opinion there are only nine species based on characters which seem trustworthy, and it is possible that two of these will not be considered distinct when they become more fully known. There remain five species which are doubtful, either because the published descriptions are incomplete or because the original material is immature or fragmentary. Two of these, as noted above, are discarded altogether by Stephani, and it is probable that the other three deserve the same fate. The doubtful species, however, will be alluded to briefly at the close of the paper.

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[7] Bull. Herb. Boissier **7**: 383-407, 518-533. 1899.

II. MORPHOLOGICAL NOTES ON THE GENUS

No other liverwort has been so much discussed and described as *Marchantia polymorpha*. According to Lindberg[1] it attracted the attention of naturalists at a very early date and was known to both Aristotle and Theophrastus. Within more recent times it has repeatedly been the subject of morphological researches and has served in numerous text books as a typical representative of the thallose Hepaticae. Over eighty years ago Mirbel[2] published the first extensive account of its morphology. He brought out the essential features of the thallus and of its various tissues and gave a clear description of the receptacles and the gemmae. Of the later works dealing with the morphology of the species those by Leitgeb,[3] Kny,[4] Ikeno,[5] and Durand[6] may be particularly mentioned. The first two deal with the plant in a general way, very much as Mirbel's memoir did, although they include many original observations. The last two are much more specialized and deal with the cytology and development of the reproductive organs. Although *M. polymorpha* itself has been treated so exhaustively the other species of the genus have been but little studied by morphologists. In one of his earlier papers Schiffner[7] published a series of interesting observations on the Javan *M. geminata* R. Bl. & N.; but aside from this, records of morphological importance are mostly in the form of scattered notes, and these are often to be found in taxonomic treatises.

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[1] Hepat. Utveckling 15. Helsingfors, 1877.

[2] Recherches anatomiques et physiologiques sur le *Marchantia polymorpha.* Mus. Hist. Nat. Nouv. Ann. **1**: 92-130. *pl. 5-7.* 1832. For a reprint of this paper, with a few slight alterations, and a Complément des observations sur le *Marchantia polymorpha,* see Mém. Acad. Sci. **13**: 337-436. *pl. 1-8.* 1835. For a translation into German by Von Flotow, see Nees von Esenbeck, Naturg. Europ. Leberm. **4**:445-494. Breslau, 1838.

[3] Unters. über Leberm. **6**: 114-123. *pl. 9.* Graz, 1881.

[4] Bau und Entwickelung von *Marchantia polymorpha* L. Bot. Wandtafeln 364-401. *pl. 84-90.* Berlin, 1890.

[5] Beiträge zur Kenntnis der pflanzlichen Spermatogenese: Die Spermatogenese von *Marchantia polymorpha.* Beih. Bot. Centralbl. **15**: 65-88. *pl. 3 + f. 1.* 1903.

[6] The development of the sexual organs and sporogonium of *Marchantia polymorpha.* Bull. Torrey Club **35**: 321-335. *pl. 21-25.* 1908.

[7] Ueber exotische Hepaticae. Anhang I. Morphologische Bemerkungen über *Marchantia.* Nova Acta Acad. Leop.-Carol. **60**: 279-284. *pl. 19.* 1893.

In the present paper the morphology of *Marchantia* will be treated largely from the standpoint of the taxonomist. In other words the parts of the plant which yield the most distinct and constant specific characters will be primarily considered. These parts include the epidermis and the epidermal pores, the compact ventral tissue, the ventral scales, the rhizoids, the receptacles, and the cupules. The photosynthetic layer, the sexual organs, and the sporophyte, although yielding important generic characters, are less helpful when the individual species are considered. For the sake of completeness, however, a brief account of the sporophyte will be included.

The flat thallus of *Marchantia* is of the usual prostrate dorsiventral type and branches repeatedly by forking. It varies considerably in size and in thickness in certain species, so that measurements of its various dimensions have to be employed with caution. At the same time some of the species are distinctly larger than others. The growth of the thallus is normally unlimited until the sexual branches or receptacles (see FIG. 9, A, B) are produced. These represent the erect prolongations of prostrate branches and are limited in growth. The inflorescence is dioicous throughout the genus. Vegetative reproduction is carried on by means of discoid gemmae, which may be formed on either male or female individuals and which apparently do not interfere with the growth of the plant.

The thallus shows clearly the usual differentiation into an epidermis, a photosynthetic layer and a compact ventral tissue bearing scales and rhizoids. The photosynthetic tissue consists of a single layer of large air-chambers separated from one another by continuous plates of cells. Each air-chamber is connected with the outside by a single pore in the epidermal roof. From the floor of the chamber arise numerous short rows of green cells, subspherical in form and freely exposed to the air of the chamber. The rows, which are simple or branched, are mostly from two to five cells long and the uppermost cells, except in the vicinity of the pore, are usually attached to the epidermis. The air-chambers vary greatly in size, not only in different species but often in different parts of an individual thallus.

1. EPIDERMIS AND EPIDERMAL PORES

The ordinary epidermal cells are fairly uniform throughout the genus and it is doubtful if they offer any very trustworthy differential characters. Their size often varies markedly on an individual thallus and may be directly affected by differences in external conditions. Although the cells are usually colorless or pale they sometimes produce chloroplasts in abundance. In the majority of cases they are arranged in a single layer, but in certain species at least, such as *M. chenopoda* (FIG. 19, E) and *M. paleacea* (FIG. 8, D), the epidermis may be two cells thick in parts of its extent. The walls may vary considerably in thickness, but they are rarely very firm and are destitute of distinct trigones.

Cells containing oil-bodies, cells containing slime, and minute surface papillae are sometimes found in the epidermis. The cells containing the oil-bodies are usually distinctly smaller than the neighboring cells and are easily distinguished by their granular contents, which nearly or quite fill the cell cavities. In *M. chenopoda* these cells are not infrequent and do not seem to be restricted to any definite part of the thallus; in *M. polymorpha* they occur near the margin and seem to be absent elsewhere; while in certain other species there are apparently no cells of this character in the epidermis.

Epidermal cells containing slime are, according to our present knowledge, restricted to *M. chenopoda.* The slime-cells are scattered about in the epidermis and always occur in regions where the epidermis is two cells thick, being situated in the inner layer (FIG. 19, L). They are much larger than the surrounding epidermal cells and strongly compress those of the outer layer. When a piece of the epidermis is examined from above the slime cells are seen to be covered over by these compressed cells. Apparently Voigt[8] was the first to observe the slime-cells, although he failed to recognize their true character. The much larger slime-canals in *Conocephalum conicum* (L.) Dumort. were soon afterwards described by Goebel,[9] and Leitgeb[10] pointed out that the slime-cells of *M. chenopoda* were of the same nature. He showed that they occurred not only *under* the epidermis, as he expressed it, but also in the compact ventral tissue and in the partitions between the air-chambers, and he emphasized the fact that they were especially abundant in the female receptacles. The distribution of the slime-cells in *Marchantia* was a little later discussed at length by Prescher.[11] He found no trace of them in *M. Berteroana, M. papillata, M. emarginata* R. Bl. & N., or *M. linearis;* he found them restricted to the compact tissue of certain definite regions in *M. polymorpha* and *M. paleacea;* and it was only in *M. chenopoda* (including *M. cartilaginea*) that he found them in the epidermis.

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[8] Bot. Zeit. **37**: 733. 1879.

[9] Arb. Bot. Inst. Würzburg **2**: 531. 1880.

[10] Unters. über Leberm. **6**: 16. 1881.

Surface papillae have been figured very accurately by Kny[12] in the case of *M. polymorpha.* They are minute appendages of the epidermis, which are cut off by walls and rounded or bluntly pointed at their free ends (FIG. 2, J, L, O, P). Sometimes a papilla is situated over a single cell and sometimes over the partition between two cells, showing in the latter case that an epidermal cell had divided after the papilla had been formed. Papillae of this type seem to be rare on vegetative branches and confined to certain species. So far they have been reported in two East Indian species, *M. emarginata* and *M. Treubii* Schiffn.,[13] but they seem to be absent from all the American species except *M. polymorpha.* In this last species, as shown by Schiffner,[14] the median portion of the thallus is always free from papillae, while the marginal regions sometimes show them clearly. The distribution is very different, however, in *M. Treubii,* where the papillae are most abundant in the median portion and gradually decrease toward the margins. Whether papillae of this character form a constant feature of any of the species where they have been found is perhaps doubtful. In one specimen of *M. emarginata,* for example, in the writer's collection (Schiffner, Iter Indicum *37*), the plants seem to have developed no papillae, and they are frequently absent from the vegetative branches in *M. polymorpha.* When they occur on receptacles or cupules, as in this same species, they seem to be more constant.

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[11] Die Schleimorgane der Marchantieen. Sitzungsb. Kais. Acad. Wissen. Wien, Math.-naturw. Cl. **86**^{1}: 132-158. *pl. 1, 2.* 1882.

[12] Bot. Wandtafeln *pl. 84, f. 2, 3.* 1890.

[13] See Schiffner, Fl. de Buitenzorg **4**: 32, 35. Leiden, 1900.

[14] Lotos **49**: 93. 1901.

The complex epidermal pores of *Marchantia* are of much interest. They are of the dolioform or barrel-shaped type, that is, the opening of the pore is surrounded by two series of cells arranged in concentric rows, one series projecting more or less above the surface of the thallus, the other projecting into an air-chamber. Although pores of this type are found on the sexual branches of most of the Marchantiaceae, the only genera where they occur on the vegetative branches are *Marchantia, Preissia,* and *Bucegia.* Even in *Marchantia,* as shown by Kamerling,[15] immature shoots sometimes produce pores of the simple type found in most of the other members of the group.

The first attempt to utilize the structural features of the pores for taxonomic purposes seems to have been made by Voigt.[16] He studied eight species of the genus, and showed that the number of pores in a given area, the number of rows of cells surrounding a pore, and the number of cells in a row were fairly constant for each species. Stephani also has drawn specific characters from the pores, but certain of his distinctions, as will be shown below, are subject to variation and must be used with caution.

In the case of *M. polymorpha* the pores have been repeatedly figured, although the published illustrations are not all of the same degree of excellence. Among recent figures those by Voigt, Kny, and Müller[17] bring out most of the essential points. According to Voigt, whose account of the pores is unusually full, the opening is surrounded by five circular rows of cells, three belonging to the upper and two to the lower series, but both Kny and Müller state that the upper series is normally composed of only two rows making four rows in all, a statement which agrees with the writer's observations (see FIG. 2, A, B). Under some conditions the number of rows may be reduced to three or even to two. In the upper series each row is composed (in most cases at least) of four cells (FIG. 2, A, B), and immediately surrounding the pore a circular membranous ridge is present, probably representing, as in the simple pores of *Targionia,*[18] a collapsed series of cells. This ridge is shown by Voigt (*f. 1*), but is not brought out in the figures of Kny and Müller. It is sometimes very narrow and absolutely colorless and can then be demonstrated only with difficulty. In the lower series each row is likewise composed in most cases of four cells, those bounding the inner opening being distinctly differentiated. Their usual appearance is clearly shown by Kny (*pl. 84, f. 2*), each cell being in the form of a narrow, curved, four-sided figure with a rounded median projection extending toward the center of the pore. All the cell-walls immediately bounding the pore are shown covered over with a granular deposit of some resinous substance, which hinders or prevents the entrance of water through the pore. Kny comments on the fact that the pores vary greatly in size and that the projections from the cells bounding the inner opening sometimes meet. In his opinion these projections probably make still more difficult the entrance of water through the pore. This view is upheld by Ruge,[19] who finds the pores almost completely closed by the projections in a submerged form of *M. polymorpha.* In FIG. 2, D-I, some of the variations shown by the cells bounding the inner opening are brought out. In FIG. 2, E, the projections are only slightly developed, although the upper cell on the left approaches the condition portrayed by Kny; in FIG. 2, D, F, I, the projections are well developed but not sharply defined from the rest of the cell; in FIG. 2, G, H, the projections are both well developed and sharply defined. These last figures, drawn from a plant growing in a very wet locality, support the statements of Ruge and agree with the figures published by Müller. The cells drawn, however, seem to be nearly or quite destitute of the resinous deposit so conspicuously shown in the remaining figures and in Müller's figures also.

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[15] Flora **84** (Ergänzungsb.): 57. 1897.

[16] Bot. Zeit. **37**: 741. 1879.

[17] Rabenhorst's Kryptogamen-Flora **6**: *f. 187*. Leipzig, 1907.

[18] See Deutsch, Bot. Gaz. **53**: 494. *f. 9.* 1912.

Although the inner openings of the pores in *M. polymorpha* are subject to so much variation, Stephani insists that important specific characters in the genus *Marchantia* are yielded by the inner openings. He recognizes four types[20] and states that they are not connected by transitional conditions. In the first type the four cells bounding the opening are narrow and not materially changed in shape by increased turgidity, the opening itself exhibiting a quadrate form. In the second type the four bounding cells bulge into the opening in the form of rounded projections, the opening itself showing an outline with four strongly concave sides and four sharp angles; by increasing the turgidity this opening can be almost completely closed. In the third type (which is essentially the same as the pores of *Preissia*) the four cells likewise bulge into the opening but the bulging portions are more sharply defined and the opening appears in the form of a four-sided figure with very concave sides but with rounded dilations at the angles; this opening, which Stephani describes as cruciate, can be completely closed by an increase of turgidity. In the fourth type the opening is very large and bounded by many cells (fifteen in Stephani's figure), each cell bulging into the opening in the form of a longer or shorter cylindrical projection, the opening itself thus acquiring a very irregular outline. To the first type Stephani assigns (among others) *M. polymorpha, M. plicàta* and *M. domingensis;* to the second type, *M. disjuncta;* and to the third type, *M. cephaloscypha* and *M. paleacea.* The only representative of the fourth type is *M. macropora* Mitt. of New Zealand.

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[19] Flora **77**: 294. *f. 11.* 1893.

[20] Bull. Herb. Boissier **7**: 385. *f. a-d.* 1899.

Schiffner,[21] however, had already called attention to the danger of placing too much confidence in the peculiarities of the cells bounding the inner openings. According to his account these cells in most species of *Marchantia* bulge more or less into the opening, the form of which may vary accordingly, and his statements would support the view that there was no sharp distinction between the first and second types of Stephani. Even in *M. Berteroana,* which Stephani would assign to his third type, Schiffner finds only an insignificant modification of the usual condition. He adds that the number of bounding cells in this species, although usually four, may vary from three to six on an individual thallus, and that the walls of the cells commonly lack the resinous deposit found in *M. polymorpha.* Goebel[22] is likewise inclined to recognize a single type of pore in *Marchantia* with respect to the inner opening, and he sees no essential difference between Stephani's fourth type and the others. He expresses no positive opinion on this last point, however, because he had no material of *M. macropora* at his disposal. He considers that the pores are plastic structures, subject to modification through external conditions, and he emphasizes the fact that the pores of xerophilous forms can often be more or less completely closed by an increased turgidity of the bounding cells.

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[21] Nova Acta Acad. Leop.-Carol. **60**: 286. *pl. 19, f. 8. 20.* 1893.

[22] Flora **96**: 193. 1906.

It is clear from the observations of Schiffner and Goebel that the pores in *Marchantia* (excepting perhaps in *M. macropora*) conform to one general type and that the distinctions relied upon by Stephani are less constant than he supposed. This is especially well seen in *M. polymorpha,* where the inner opening shows all gradations from a quadrate to a cruciate form and thus exemplifies all three of the conditions upon which the first three of Stephani's types were based. *M. polymorpha,* however, is an exceedingly plastic species and it is doubtful if any of the other members of the genus exhibit the same wide range of variation in the inner opening. Schiffner's figures of *M. geminata,* for example, although illustrating conditions connecting the first and second of Stephani's types, show no approach to the third; while in *M. paleacea,* according to the information at hand, the inner opening is always cruciate and thus does not deviate from the third type. For purposes of taxonomy, therefore, the writer would still consider it expedient to recognize two types of pore among the American species, the distinctions between the types breaking down in the case of *M. polymorpha.* In the first type (which includes Stephani's first and second types) the inner opening is bounded by three to six cells, the usual number being four, and shows all gradations between a polygon, commonly four-sided, with slightly convex sides and one with strongly concave sides and sharp angles. In the second type (which is the same as Stephani's third type) the inner opening is distinctly cruciate with four rays dilated at the apex or, in the rare cases where the number of bounding cells is less or greater than four, with fewer or more rays. Stephani's fourth type, which does not occur in America so far as known, need not be further considered.

As an example of the first type of pore *M. chenopoda* may be selected. In this the opening, as pointed out by Voigt, is surrounded by about seven rows of cells, shown clearly in cross-section (FIG. 19, C-G), four of the rows usually belonging to the upper and three to the lower series. The walls bounding the opening are either smooth or with a resinous deposit. In the upper series (FIG. 19, A, B) the innermost row is usually composed of four narrow cells and the second row of the same number, but the third row commonly shows twice as many and the fourth row a much larger number. The ridge immediately around the opening is clearly marked. In the lower series (Fig. 19, H-K) the innermost row lies almost directly beneath the second row, so that only the first and third rows show clearly from below. The first and second rows are usually composed of four cells each, the walls bounding the pore being more or less strongly convex. The third row usually contains more cells than the first and sometimes twice as many, but it rarely contains as many as the fourth row of the upper series, where the cells are essentially like the ordinary epidermal cells. Of course the numbers just given are subject to variation, the number of cells bounding the outer and inner openings being often more than four.

As an example of the second type of pore *M. paleacea* may be selected, and the illustrations given in the present paper (Fig. 8, A-H) may be compared with the one published by Müller.[23] The descriptions given by Voigt may likewise be consulted. The cells bounding the pore are usually in six rows, three belonging to each series, and the rows are commonly composed of four cells apiece. The cell-walls bounding the pore are smooth throughout. In the upper series the ridge around the opening is distinct and the cells are very narrow, standing in sharp contrast to the neighboring epidermal cells. In the lower series the cells bounding the inner opening are much broader than the others and project so strongly that they often touch in the center and almost occlude the cruciate opening. Sometimes one or more cells of the second row project also (Fig. 8, D), but the cells of both the second and third rows are usually narrow, resembling in this respect the cells in the upper series.

According to the account given by Kamerling,[24] the size of the inner opening in a pore of the first type is not decreased to any great extent by an increase of the turgidity of the surrounding cells, while in a pore of the second type the decrease is very marked. In his opinion the cells surrounding the inner opening act independently of the cells in the other rings. As a definite example of a species with pores that can be closed he quotes *M. nitida* Lehm. & Lindenb., a species which is to be regarded as a synonym of *M. paleacea*.

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[23] Rabenhorst's Kryptogamen-Flora **6**: *f. 188.* 1907.

[24] Flora **84** (Ergänzangsb.): 46. 1897.

2. COMPACT VENTRAL TISSUE

The ventral tissue in *Marchantia* gradually thins out from the thickened median portion until it is frequently only two or three cells thick along the margins of the thallus. It consists primarily or even wholly of parenchyma and its chief function apparently is to act as a storage-tissue for water and organic food. In some parts of the thallus it is usually possible to demonstrate the presence of elongated pits in the cell-walls, and a purplish pigmentation of the walls is often apparent. Cells containing oil-bodies are usually conspicuous among the other parenchyma cells (FIG. 20, A) and seem to be present in all the species. In herbarium material, however, it is not always easy to demonstrate them. Cells containing mycorrhiza are likewise very frequent. In *M. chenopoda,* as noted by Leitgeb and Prescher, the ventral tissue and the partition walls between the air-chambers contain scattered slime-cells similar to those found in the epidermis. Slime-cells of this character occur also in the compact tissue of *M. paleacea, M. breviloba* sp. nov. and the East Indian *M. emarginata,* but have not yet been detected in other species except in connection with the reproductive organs. According to Cavers[25] the slime-cells and slime-canals of *Conocephalum conicum* fail to develop when the plants are cultivated under water, and it is therefore possible that slime-cells may not always be present in the species of *Marchantia* just listed. In fact Prescher reported that they were absent from *M. emarginata,* and specimens of *M. paleacea* and of *M. chenopoda* might be cited where they are very infrequent or perhaps not present at all.

The only cells found in the ventral layer which are not parenchymatous in their nature are the more or less elongated sclerotic cells with yellow or brown walls, which occur in certain species. Cells of this character were first demonstrated by Goebel[26] in the case of *Preissia quadrata* (Scop.) Nees, and the same author has called attention to their occurrence in the New Zealand *M. foliacea* Mitt.[27] In this species, according to his account, the sclerotic cells are variable in length and are usually scattered singly among the parenchyma cells. Occasionally two cells will occur end to end and sometimes even longer groups or strands are formed, perhaps corresponding with Stephani's "strands of sclerenchyma." The walls of the cells are thick and pigmented, showing that their functions are primarily mechanical, but Goebel finds that the cavities sometimes contain starch-grains. Sclerotic cells occur in several American species, such as *M. paleacea, M. chenopoda* (FIG. 20, A, B) and *M. domingensis,* and agree closely with Goebel's description. Whether they are always produced by the species where they have been detected is perhaps a question. Cavers[28] calls attention to the fact that *Preissia quadrata,* when grown indoors in a moist atmosphere, fails to develop thick-walled cells, and in all probability the formation of the similar cells in *Marchantia* is influenced by environmental conditions. In any case, however, the presence of sclerotic cells is associated with certain definite species.

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[25] Ann. Bot. **18**: 93. 1904.

[26] Arb. Bot. Inst. Würzburg **2**: 533. 1882.

[27] Flora **96**: 194. *f. 143.* 1906.

3. VENTRAL SCALES

The ventral scales in *Marchantia* exhibit considerable diversity, not only when different species are compared but also when an individual species is considered. This is due to the fact that each species produces at least two distinct kinds of scales, only one of which bears appendages. In the other genera of the Marchantiaceae the scales with appendages are the only kind produced.

Taylor[29] was apparently the first to observe that the scales in *M. polymorpha* were not all alike. He distinguished three different kinds, and these are described at length by Leitgeb,[30] who designates them as median, laminar and marginal scales, respectively. The median scales are attached by a long line, which begins near the axis of the thallus, then extends almost longitudinally and finally curves gently outward, reaching perhaps half way to the margin. The scales are at first very narrow but become abruptly dilated in the outer part; here on each scale the characteristic appendage is attached, strongly contracted at its junction with the scale and then abruptly dilated into an orbicular expansion, rounded to apiculate at the apex (FIG. 1).

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[28] Contrib. to the Biol. of the Hepat. 28. Leeds and London, 1904.

[29] Trans. Linn. Soc. 17:377. 1835.

[30] Unters. über Leberm. 6: 114. 1881.

The laminar scales are more numerous than the median scales and form a series about midway between the median scales and the margin. They are attached by a much shorter line and broaden out at once into lunulate or ovate structures, rounded at the apex and destitute of appendages. The marginal scales are still more numerous and attached by even shorter lines, but they resemble the laminar scales in lacking appendages and in most other respects. They are situated near the margin and some of them extend beyond. The arrangement of the scales is shown clearly in a figure by Goebel,[31] who brings out the fact that the laminar scales are arranged in an irregular row and that the marginal scales are still more irregular in their arrangement, although a linear series is approximated.

The account of the scales just given is somewhat at variance with the description and figures of Müller.[32] According to this author the innermost scales are long and very narrow; they are attached almost longitudinally throughout their entire length and are destitute of appendages. These are said to be borne instead on the scales of the next outer row, which agree in all respects with the median scales as described by Leitgeb. The third type of scale recognized by Müller includes both the laminar and marginal scales of Leitgeb. An interpretation of the scales, closely agreeing with Müller's, has recently been published by Massalongo.[33] The present writer, however, has been unable to demonstrate the narrow innermost scales without appendages. According to his observations the statements of Leitgeb are essentially correct.

The scales in *M. polymorpha,* as well as in the other species, are delicate in texture and are sometimes more or less pigmented; in most cases, however, the pigmentation is of short duration and the scales become bleached and transparent. The cells tend to be wavy and irregular, especially toward the margin (FIGS. 7, A; 20, C). The cell-walls are thin, although trigones may sometimes be demonstrated on the marginal scales. Scattered about among the other cells are cells containing oil-bodies (FIG. 20, D) and rhizoid initials, the latter giving rise to tuberculate rhizoids (FIG. 20, E). In the appendages rhizoid initials are absent, but cells containing oil-bodies can often be distinguished (FIGS. 1, 3, etc.).

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[31] Organographie der Pflanzen *f. 158.* Jena, 1898.

[32] Rabenhorst's Kryptogamen-Flora **6**:17. *f. 12.* 1905.

[33] Atti R. Ist. Veneto **75**: 696. *pl. 4, f. 12-15.* 1916.

According to Leitgeb the scales in certain species, such as *M. domingensis* and *M. nitida,* are all of the median type while in *M. chenopoda* the laminar scales are less numerous than the median scales and the marginal scales are absent altogether. In Goebel's figure of *M. chenopoda*[84] a single laminar scale is shown among sixteen median scales and the implication is made that the number of laminar scales is very small. The writer has examined numerous specimens of *M. paleacea* (which includes *M. nitida*), of *M. chenopoda* and of other species and finds laminar scales always present (see FIG. 6, H-O). They differ from the laminar scales in *M. polymorpha,* however, in being situated much closer to the median scales. On account of their shorter lines of attachment they extend only a small part of the distance toward the median line. The laminar scales usually alternate with the median scales but occasionally there may be two laminar scales between two successive median scales. Under these circumstances one of the laminar scales is often reduced in size.

The species just noted will give some idea of the differences in arrangement which the ventral scales may show. These differences can often be utilized in separating species, but the best differential characters yielded by the scales are those drawn from the appendages. These are, with very rare exceptions, borne singly and, as has been shown, are confined to the median scales. Although the appendages vary, within wide limits in certain species, they nevertheless present striking and distinctive features. In comparing them the form, the character of the margin and apex, the size of the cells, and the presence or absence of cells containing oil-bodies should be taken into consideration. With respect to size the cells may be approximately the same throughout the entire extent of an appendage (see FIG. 16, F, G). It is much more usual, however, for the median cells to be much larger than the marginal cells and the gradation from one to the other may be either gradual (see FIG. 7) or very abrupt (see FIG. 5, A-D). The texture of the scales, aside from the appendages, is much the same throughout the genus. The scales and their appendages will be again considered in connection with the various species discussed below.

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[84] *L. c. f. 157.*

4. RHIZOIDS

The rhizoids in the genus *Marchantia,* as in practically all of the Marchantiales, are of two types, the smooth and the tuberculate. In the smooth type the walls are thin or uniformly thickened; in the tuberculate type numerous local thickenings of the wall extend into the lumen of the rhizoid in the form of cylindrical or bluntly conical projections. In some of the tuberculate rhizoids the projections are discrete and irregular in their distribution; in others they are more or less coalescent and show a spiral arrangement. Kamerling[35] has shown that these spiral tuberculate rhizoids are abundant in *M. polymorpha* and Schiffner[36] has examined this and other species of the genus with reference to these peculiar structures. He confirms Kamerling's statements about their occurrence in *M. polymorpha* and finds, so far as American species are concerned, that they are equally abundant and typical in *M. chenopoda;* that they still occur, although in less typical form, in *M. domingensis* and its allies; and they are wanting altogether in *M. paleacea.*

Most of the rhizoids in *Marchantia* run in parallel bundles under the scales and converge to form a single large median bundle. There are, however, numerous rhizoids in the thickened median portion which spread at right angles to the surface, and Schiffner has made a number of interesting observations on these. In forms of *M. polymorpha* where a definite dorsal band lacks air-chambers, the rhizoids in question are smooth; in forms where the air-chambers extend across the median region, the rhizoids are tuberculate. In *M. plicata* the spreading rhizoids are smooth; in *M. chenopoda,* smooth; in *M. Berteroana,* tuberculate; in *M. paleacea,* smooth or with scattered tubercles. These differences may sometimes be of help in distinguishing species.

5. RECEPTACLES

The receptacles in *Marchantia* are strikingly different from the vegetative branches and attain a higher degree of complexity than in any other genus of the group. Two distinct portions may be distinguished, the erect stalk and the horizontal disc (or receptacle proper), which bears the sexual organs. In some cases the disc shows clearly that it has but one plane of symmetry. In other cases it presents the appearance of being radial; but even here, as recently emphasized by Goebel,[37] there is actually but a single plane of symmetry, a fact made clearly evident when the structure and development of the receptacle are considered. The stalk, likewise, looks superficially as if it were radial, but here again a single plane of symmetry is present, and the stalk maintains its dorsiventrality (or zygomorphy) in spite of its erect position.

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[35] Flora **84** (Ergänzungsb.) : 31. *pl. 1, 2, f. 7.* 1897.

[36] Ann. Jard. Bot. Buitenzorg **2** (Suppl. 3) : 489, 490. 1909.

It has already been noted that the receptacles represent prolongations of prostrate branches. These branches may be more or less elongated, but they are often very short, a receptacle being developed almost immediately after a dichotomy has taken place. A receptacle, as shown so clearly by Leitgeb,[38] is a branch-system, the growing point of the original prostrate branch undergoing one or more divisions. A study of the stalk shows that the first division usually takes place very early in the development of the receptacle. If a cross-section is examined (FIGS. 5, K; 8, 5; etc.) the dorsiventrality of the stalk becomes at once apparent, and the side which represents the ventral portion usually shows two deep longitudinal furrows, enclosed by scales and containing tuberculate rhizoids, the dorsal side being destitute of such furrows. In very rare cases a single furrow is present near the base of the stalk (FIG. 20, I). The presence of two furrows is evidence that the growing point has already divided once, even if the stalk itself remains undivided. Usually no further divisions take place until the disc begins to develop, but in some cases the stalk shows three or four rhizoid furrows, indicating that one or two secondary divisions have occurred. This is seen clearly in *M. breviloba* and *M. domingensis* (FIGS. 9, I-K; 12, A, D). In the first the stalks of both male and female receptacles show four furrows apiece; in the second the stalk of the male receptacle which is figured shows three furrows, the stalk of the female receptacle showing four. The occurrence of more than two furrows has apparently been rarely observed in *Marchantia* and allied genera. Spruce[39] mentions the occasional presence of three furrows in the stalk of the female receptacle in *Marchantia,* without citing definite species; Leitgeb,[40] in a single instance, found four furrows in the stalk of the female receptacle in *Preissia quadrata;* Stephani[41] states that the stalk of the male receptacle in the African *M. Wilmsii* Steph. has four furrows but doubts the constancy of this condition; and Schiffner[42] notes that the stalk of the female receptacle in *Bucegia romanica* Radian sometimes shows four furrows. These seem to be the only references to more than two furrows in the literature, but in all probability a higher number than two would occasionally be found in most species of *Marchantia* if enough stalks were examined. In *M. breviloba* four furrows seem to be the rule in the female receptacle, although it would hardly be safe to state that four were always present.

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[37] Organographie der Pflanzen, 2d ed. 686. 1915.

[38] See Unters. über Leberm. **6**: 20-37. 1881.

In the case of *M. polymorpha* it was noted long ago by Mirbel that the dorsal side of the stalk of the female receptacle showed a distinct strip of photosynthetic tissue with air-chambers, epidermal pores and short green filaments. This strip seems to be of constant occurrence throughout the genus. It commences close to the base of the stalk and extends nearly to the disc. In most cases the strip is continuous (Figs. 5, K; 8, J; 9, K; etc.) but sometimes, as in *M. chenopoda,* it may be separated into two strips by a median groove (Fig. 20, G-I). In the stalk of the male receptacle photosynthetic tissue is usually absent, the dorsal portion being composed of compact parenchyma. In certain species, however, such as *M. domingensis,* the photosynthetic tissue is about as well developed in the male (Fig. 12, A) as in the female receptacle. In *M. breviloba* the lower part (Fig. 9, I) of the stalk develops photosynthetic tissue while the upper part (Fig. 9, J) lacks it completely.

In the disc of the male receptacle the dichotomous branching usually continues and a distinct division into rays becomes apparent. Although the number of rays is subject to variation, certain numbers seem to be normal or typical for certain species. In *M. polymorpha,* for example, there are usually eight rays present and in *M. chenopoda,* four, although deviations from these numbers are of frequent occurrence. Goebel[43] considers that the number of rays developed is dependent on nutritive conditions. In an unnamed species from the Fiji Islands, related to *M. geminata,* he notes a reduction in the number of rays to two, showing that only one dichotomy has taken place, and he compares this extreme condition with the two-rayed female receptacles found in *Exormotheca* and *Aitchisoniella.*

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[39] Trans. Bot. Soc. Edinburgh **15**: 558. 1885.

[40] Unters. über Leberm. **6**: 31. 1881.

[41] Hedwigia **31**: 196. 1892.

[42] Beih. Bot. Centralbl. **23**^{2}: *282. f. 16.* 1908.

The rays are in one plane and vary greatly in length. They are sometimes much shorter than the undivided portion of the receptacle, appearing in the form of rounded marginal scallops separated by shallow but acute sinuses. This condition is seen clearly in *M. polymorpha* and its allies. It is much more usual, however, for the rays to be longer than the undivided portion, the whole receptacle thereby acquiring a palmate appearance. This type of receptacle is found in such species as *M. chenopoda* and *M. domingensis* and is commonly associated with a smaller number of rays than the first type. In some cases at the tip of a ray a slight depression marking the position of a growing point can be discerned, even in an old receptacle, but often all traces of the growing points disappear. The stalk is not attached to the disc marginally but peltately, although often excentrically. The peltate attachment is due to intercalary growth taking place in the region where the dorsal surface of the stalk and the dorsal surface of the disc would naturally be continuous. In this way a thin plate of tissue is formed between the two external rays of the disc, which would theoretically be distinct to their junction with the stalk. The presence of this plate, similar in all essential respects to the tissue forming the sinuses, intensifies the radial appearance which the receptacles of certain species show.

In its structure the disc shows many of the features which are found in the vegetative thallus. It is distinctly dorsiventral and the differentiation into epidermis, photosynthetic tissue and compact ventral tissue is clearly marked. On the ventral surface of the rays scales with appendages and scales without appendages can be distinguished in two or more series, and the appendages are much like those of the ordinary scales except that they are smaller and sometimes less constricted at the base. Rhizoid initials are present among the cells of the scales, the appendages alone being free from them.

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[43] Organographie der Pflanzen, 2d ed. 699. *f. 669 II.* 1915.

The antheridia arise in acropetal succession, the oldest being formed near the center of the disc. In many species each ray develops two distinct rows of antheridia, but in certain species, such as *M. polymorpha,* the antheridia are more irregular in their arrangement and each ray shows more than two indistinct rows. The antheridia are borne singly in deep depressions with small circular openings. The depressions extend down into the compact ventral tissue, and are surrounded by the characteristic air-spaces with their branched rows of photosynthetic cells and dolioform epidermal pores.

The stalk of the female receptacle develops more slowly than that of the male receptacle and persists in an active condition until the sporophytes are mature. In the disc the division into rays takes place just as in the male receptacle and the number of rays present is subject to similar variations. The archegonia form groups and arise in acropetal succession, beginning when the disc is very young; but, on account of the strong intercalary growth in the median region of the dorsal portion, the archegonia are arched over and displaced until they seem to be situated on the ventral surface of the disc. In this way the oldest archegonia come to lie nearest the periphery of the disc and the youngest nearest the stalk. Each group of archegonia contains a variable number, arranged in two or three more or less definite radial rows, and is derived from one of the growing regions of the disc.

In the East Indian *M. geminata* and its allies the groups of archegonia are clearly situated underneath the rays of the receptacle. These rays, therefore, are obviously homologous with the rays of the male receptacles throughout the genus. This condition, however, is very exceptional. In most species of the genus, including all the American representatives, the groups of archegonia alternate with the rays of the receptacle and are situated in the sinuses between them. This is caused by the rapid intercalary growth of the regions between the growing points, the so-called "middle lobes"; the rays, accordingly, are formed by the middle lobes and are not homologous with the rays of the male receptacle but rather with the sinuses. These relationships are discussed at length by Leitgeb,[44] who notes also the fact that the two external rays are to be compared with the "side lobes" in an ordinary dichotomy. In *M. polymorpha,* where nine rays are commonly present, seven would represent middle lobes and two, side lobes. Between the two side lobes there is of course no group of archegonia, so that there are eight groups for the entire receptacle, showing that three dichotomies have taken place.

The rays of the female receptacles vary in length, very much as in the case of the male receptacles. There is, however, no correspondence between the two. In *M. polymorpha,* for example, the rays of the female receptacle are long, and those of the male receptacle are short, while in *M. chenopoda* the conditions are reversed. The rays of the female receptacle differ also in form, being flat in some species and cylindrical in others. When they are flat they are often retuse or shortly bilobed at the apex, and Goebel points out that a deepening of the apical sinuses would lead to the condition found in *M. geminata,* where sinuses instead of rays are present between the groups of archegonia. In young receptacles the rays are strongly curved downward, but they gradually straighten out if fertilization has taken place and assume a horizontal position.

On account of the strong intercalary growth which displaces the archegonia to the lower surface of the disc, the portion of the receptacle which is morphologically ventral is less extensive than at first appears. The lower surface between the groups of archegonia is ventral in character and the same thing is of course true of the lower surface of the rays, especially when these represent the middle lobes of the branch-system. Even here, however, when the rays become cylindrical through intercalary dorsal growth, the ventral surface is much less extensive than the dorsal. In *M. geminata* the ventral surface of the rays is situated on both sides of the groups of archegonia. The ventral surface is characterized by the presence of tuberculate rhizoids and slender scales, the latter being sometimes branched and strikingly different from the ventral scales of the vegetative thallus. The dorsal portion (except where the archegonia are situated) develops a complex system of air-chambers of the usual type.

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[44] Unters. über Leberm. **6**: 34. 1881.

Each group of archegonia is enclosed by an involucre, which consists of a pair of membranous structures often toothed or laciniated on the margin (FIGS. 2, M; 4, F, G; 8, K; etc.). Each archegonium is further protected by a campanulate pseudoperianth contracted at the mouth to a small opening. It begins its development soon after the archegonium is formed but does not reach full maturity unless fertilization has taken place. The pseudoperianth is very delicate and becomes irregularly torn when the stalk of the sporophyte elongates.

6. SPOROPHYTE

The sporophyte, as in all the Marchantiaceae, shows the usual differentiation into foot, stalk and capsule. The foot is flattened and forms a low ridge enclosing the base of the stalk. The latter is at first very short, but it elongates sufficiently at maturity to push the capsule through the calyptra and beyond the mouth of the pseudoperianth. The capsule constitutes the principal part of the sporophyte. It is nearly spherical in form and is bounded on the outside by a wall composed of a single layer of cells. These cells throughout the genus have brownish ring-like thickenings in their walls, although the rings are often incomplete. The entire cavity of the capsule is filled with spores and elaters. The spores are much smaller than in most genera of the Marchantiaceae, especially in *M. polymorpha* and its allies. In some cases a distinct border is present where the spherical face meets the three plane faces, and under these circumstances low and irregular surface lamellae are usually developed. In other cases the spores are destitute of distinct markings and become completely rounded off after the tetrads break up. The elaters are long and slender and of the usual type, showing two distinct spiral bands. At maturity the wall of the capsule splits from the apex to about the middle into an indefinite number of lobes, some of which may become further subdivided. There are apparently no very definite lines of dehiscence, the edges of the splits being irregular and jagged from projecting cells which formerly interlocked. Except for the spores, which differ in size and in the peculiarities of their walls, the sporophyte yields very few differential characters.

7. CUPULES

The characteristic gemmae of *Marchantia* have been repeatedly described. They consist of flat discoid structures, each bearing two opposite marginal growing points in shallow indentations. They are attached to the thallus by a short stalk, which joins the margin of the gemma midway between the growing points, the gemma in consequence being vertical in position. The gemmae occur in clusters on the upper surface of the thallus and are surrounded by a circular membranous outgrowth, forming a cup or cupule. Although the gemmae are very uniform throughout the genus, the cupules yield a few differences which sometimes assist in the determination of species. Two principal types occur: in the one, the margin of the cupule is simply dentate to ciliate, the teeth being sometimes scattered and sometimes close together; in the other type the margin bears a series of triangular pointed lobes, the edges of which are dentate to ciliate. As an example of the first type *M. domingensis* (FIG. 12, K) may be cited, while *M. polymorpha* (FIG. 2, N) shows the second type clearly.

III. DESCRIPTION OF SPECIES

Nees von Esenbeck[1] divided the genus *Marchantia* into the two sections *Astromarchantia* and *Chlamidium.* The first included species in which the female peduncle was "central"; the second, which was first proposed by Corda as a genus, included species in which the female receptacle was "excentric." In the first section he placed *M. polymorpha,* in the second *M. paleacea.* These two sections are retained in the Synopsis Hepaticarum, except that the first is renamed *Stellatae;* they are likewise retained by Dumortier,[2] who coined the name *Marchantiotypus* for the first section. Schiffner[3] follows the example of the Synopsis, emphasizing the radial symmetry of the female receptacle in the *Stellatae;* while Stephani bases his two groups, "a" and "b," which he does not designate by formal names, upon differences in the symmetry of the female receptacle, the first group including species with "symmetrical" receptacles and the second, species with "unsymmetrical" receptacles. It is interesting to note that he includes *M. paleacea* in his first group, although his predecessors had placed it definitely in the section *Chlamidium.*

The fact has already been brought out that the female receptacles throughout the genus are always symmetrical with respect to one plane of symmetry but never with respect to more than one. Stephani's distinction, therefore, falls to the ground, and the distinction in the position of the stalk, emphasized by Nees von Esenbeck, is not much more trustworthy. In certain species, where the two basal rays are sometimes distinctly shorter than the others and sometimes about as long, it breaks down altogether; in the first case the stalk would be "excentric," in the second "central." At the same time the sections *Astromarchantia* and *Chlamidium* represent natural groups of species and can still be maintained if different characters are used to distinguish them. In *Astromarchantia,* for example, there are no sclerotic cells in the thallus, and the rays of the female receptacle are terete, at least in the outer part; in *Chlamidium,* sclerotic cells are normally present in the thallus, and the rays of the female receptacle are flat or convex. In both these sections the involucres (and clusters of archegonia) alternate with the rays. A third group, typified by *M. geminata,* in which the involucres are situated beneath the rays, also seems worthy of sectional rank, but since this group is not represented in America (at any rate according to our present knowledge), it need not be further considered here.

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[1] Naturg. Europ. Leberm. 4:60. 1838.

[2] Bull. Soc. Bot. Belgique 13:150. 1874.

[3] Engler & Prantl, Nat. Pflanzenfam 1^3: 37. 1893.

In the preparation of this paper the writer has had the privilege of examining the large collection of *Marchantiae* in the herbarium of the New York Botanical Garden (N. Y.),[4] which includes the Mitten and Underwood herbaria. This has been supplemented by the specimens in the Cryptogamic Herbarium of Harvard University (H.), which includes the Taylor and Sullivant herbaria, and by the material in the United States National Herbarium (U. S.), the private herbarium of Miss C. C. Haynes (C. C. H.), and the herbaria at Yale University (Y.), the last including the Eaton herbarium and the writer's private herbarium. Several specimens from the Montagne (M.) and Boissier (B.) herbaria, including a number of types, have likewise been available for study, through the courtesy of MM. Paul Hariot and G. Beauverd, respectively. The writer would extend his sincere thanks to all who have aided him in his work.

Key to the species

Thallus destitute of sclerotic cells: stalk of male receptacle destitute of air-chambers, with two rhizoid-furrows; rays short and broad: stalk of female receptacle with a single band of air-chambers and two rhizoid-furrows; rays mostly nine or more, terete, at least in outer part; involucre with dentate or ciliate lobes: cupules with dentate lobes, bearing papillae on outside.
Section I. ASTROMARCHANTIA.

- Epidermal pores usually surrounded by four rows of cells, never distinctly cruciate: marginal scales present; appendages of median scales irregularly crenulate or denticulate.
  - Rays of female receptacle bearing papillae; basal sinus scarcely or not at all wider than the others.
1. *M. polymorpha.*
  - Rays of female receptacle destitute of papillae; basal sinus usually distinctly wider than the others.
2. *M. plicata.*

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[4] The letters in parentheses are abbreviations used below in the citation of specimens.

Epidermal pores usually surrounded by six rows of cells, distinctly cruciate; marginal scales not present; appendages of median scales minutely and regularly crenulate or denticulate; rays of female receptacle destitute of papillae; basal sinus scarcely or not at all wider than the others.

3. *M. Berteroana.*

Thallus with sclerotic cells: epidermal pores usually surrounded by five to seven rows of cells: marginal scales not present: rays of female receptacle mostly five to nine, rarely more, flat to convex on upper surface, never terete, destitute of papillae; basal sinus usually distinctly wider than the others: cupules destitute of papillae.

Section II. Chlamidium.

Stalk of female receptacle with a single band of air-chambers.

Epidermal pores cruciate: appendages of scales entire or slightly toothed: stalk of male receptacle destitute of air-chambers, with two rhizoid-furrows; rays short and broad: stalk of female receptacle with two rhizoid-furrows; rays long and narrow; involucre with ciliate lobes: cupules with dentate lobes.

4. *M. paleacea.*

Epidermal pores not cruciate: stalk of male receptacle with a single band of air-chambers and two to four rhizoid-furrows; rays long and narrow (at maturity): stalk of female receptacle with two to four rhizoid-furrows; involucre vaguely or not at all lobed, entire to ciliate: cupules not lobed, dentate to ciliate.

Appendages of ventral scales sparingly crenulate or denticulate: rays of female receptacle short and broad, mostly eleven; involucre ciliate.

5. *M. breviloba.*

Appendages of ventral scales usually closely denticulate or ciliolate: rays of female receptacle long and usually narrow.

Epidermal pores mostly 90-130 x 70-80μ: rays of female receptacle slightly or not at all dilated at the apex, rarely emarginate; involucre crenulate to ciliate.

6. *M. domingensis.*

Epidermal pores mostly 50-70 x 40-45μ: rays of female receptacle distinctly dilated at the apex, usually emarginate; involucre entire to crenulate.

7. *M. papillata.*

Stalk of female receptacle with two bands of air-chambers and two rhizoid-furrows; rays normally five, short and rounded, not dilated; involucre dentate to ciliate or laciniate: stalk of male receptacle with two rhizoid-furrows: epidermal pores not cruciate: appendages of ventral scales entire to sparingly dentate: cupules not lobed, dentate to ciliate.

Thallus thin and very delicate.

8. *M. Beschrellei.*

Thallus usually thick and firm.

9. *M. chenopoda.*

SECTION I. **Astromarchantia**

1. MARCHANTIA POLYMORPHA L.

Marchantia polymorpha L. Sp. Plant. 1603. 1753.

Marchantia stellata Scop. Fl. Carn. 24 ed. 353. 1772.

Marchantia umbellata Scop. *l. c.* 354. 1772.

Marchantia coarctata Corda; Opiz, Beitr. zur Naturg. 647. 1828 (*nomen nudum*).

Marchantia elliptica Corda, *l. c.* 647. 1828 (*nomen nudum*).

Marchantia Kablichiana Corda, *l. c.* 647. 1828 (*nomen nudum*).

Marchantia macrocephala Corda, *l. c.* 647. 1828. (*nomen nudum*); Sturm, Deutschl. Flora **2**: 63. *pl. 17.* 1832.

Marchantia vittata Raddi, Mem. Soc. Ital. Modena **20**: 45. 1829.

Marchantia Syckorae Corda; Nees von Esenbeck, Naturg. Europ. Leberm. **4**: 97. 1838.

Marchantia oregonensis Steph.; Röll, Bot. Centralbl. **43**: 203. 1891.

Thallus pale to dark green, not glaucous, sometimes with a brownish or purplish median band on the upper surface, often more or less pigmented with purple on the lower surface, usually 0.75-1.25 cm. wide and 4-6 cm. long, repeatedly dichotomous, the successive forks usually 2 cm. or less apart; texture sometimes delicate, sometimes firm, but never leathery, margin entire or minutely denticulate; epidermis composed of cells with thin or slightly thickened walls, mostly 20-60μ long (averaging about 29μ) and 12-20μ wide (averaging about 16μ), papillae present near the margin or absent altogether; pores (with their surrounding cells) mostly 60-75μ long and 40-60μ wide, sometimes measuring as much as 90 x 65μ, surrounded usually by four rows of cells (two in each series), each row being usually composed of four cells, inner opening usually four-sided, the sides rarely concave throughout, each bounding cell usually projecting inward in the form of a rounded papilla with subparallel or converging sides, mostly with a resinous deposit; air-chambers low, more or less elongated, their boundaries indistinct when viewed through the epidermis, usually present everywhere (except close to the margin) but sometimes absent from the median region, rows of photosynthetic cells sometimes three cells long but often shorter; compact ventral tissue mostly twelve to twenty cells thick in the median portion, destitute of slime cells and sclerotic cells, the cell walls slightly thickened and showing distinct pits; ventral scales in three rows on each side of the thallus, median and marginal scales in distinct rows, laminar scales in a more indefinite row, scales often more or less pigmented with purple, the marginal scales close together though scarcely imbricated, usually projecting beyond the margin; appendages of median scales broadly orbicular, mostly 0.5-0.75 mm. long and 0.6-0.8 mm. wide, rounded to very bluntly pointed, sometimes apiculate, margin usually minutely and irregularly denticulate, sometimes (in hygrophilous forms) tending to be crenulate, cells showing a gradual decrease in size toward the margin, median cells subisodiametric, mostly 35-40μ in diameter, marginal cells mostly 20-25μ long and 14-16μ wide, sometimes smaller (10-16μ x 10μ), cells containing oil-bodies about 20μ in diameter, usually from five to ten on each appendage, restricted to submarginal (and, rarely, marginal) portions: male receptacle borne on a stalk 1-3 cm. long with two rhizoid-furrows, destitute of dorsal air-chambers, the disc mostly 0.7-1 cm. broad, shortly lobed or merely crenate, the lobes or rays mostly eight (rarely nine or ten), 2 mm. long or less, rounded at the apex with thin wavy margins, covered ventrally with densely imbricated scales in several rows: female receptacle borne on a stalk 2-7 cm. long, with two rhizoid-furrows and a single broad dorsal band of air-chambers, the disc mostly 0.8-1.3 cm. broad, deeply lobed, the lobes or rays spreading at maturity, mostly nine (sometimes ten or eleven), 3-5 mm. long, separated by subequal sinuses, terete, covered over with epidermal papillae; involucre deeply and irregularly lobed, the lobes long-acuminate and ciliate on the margins: spores yellow, 12-15μ in diameter, nearly smooth; elaters 3-5μ wide, bispiral: cupules deeply lobed, the lobes acute to acuminate, usually dentate to short-spinose on the sides, outer surface with epidermal papillae. (FIGS. 1, 2.)

Throughout the greater part of Europe and in the northern parts of Asia and North America *M. polymorpha* is the only representative of the genus and is exceedingly abundant. It grows in swamps and bogs, on rocks and walls near the ground, on banks and the sides of ditches, in gardens and greenhouses, and on the earth in fields and woods. It is perhaps most luxuriant in bogs and on steep rocky hillsides where a liberal supply of water is available. In the woods it is especially likely to occur where a fire has left a supply of charcoal behind. Toward the south other species of *Marchantia* make their appearance and *M. polymorpha* becomes less abundant. In many places it presents the appearance of being an introduced plant.

A search through the literature shows that the occurrence of *M. polymorpha* south of the equator has been doubted or denied by certain authors. Hooker,[5] for example, about fifty years ago, stated that *M. tabularis* (i. e., *M. Berteroana*) was the southern representative of the northern *M. polymorpha,* thus implying that the latter species was absent from antarctic regions. Stephani[6] is even more definite when he describes the habitat of the species as "Europa, Asia et America septentrionalis." Other authors, however, cite definite stations for *M. polymorpha* from the Southern Hemisphere. It will be sufficient to mention in this connection the recent record by Schiffner[7] for Kerguelen Island, that by Kaalaas[8] for the Crozet Islands, and that by Howe[9] for South Georgia. In the opinion of the present writer the occurrence of the species in South America has been clearly established. Specimens from Ecuador, Bolivia and Patagonia have been carefully studied and have been found to agree in all essential respects with European and North American material. Specimens from Kerguelen Island, collected by the Challenger Expedition, and the specimens from South Georgia cited above have likewise been examined, and have been found equally convincing, but no further statements can be made from personal knowledge regarding the distribution of the species in other parts of the Southern Hemisphere.

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[5] See Handb. New Zealand Fl. 545. 1867.

On account of the abundance of *M. polymorpha* in the United States and northward it seems inadvisable to give a full list of the North American specimens which have been examined. It is enough to state that the species has been collected in Greenland and other parts of arctic America, in Alaska, in nearly every Canadian province and territory and in nearly every state of the Union. The specimens cited below are from tropical North America and from South America.

FEDERAL DISTRICT OF MEXICO: Cañada San Magdalena, Contreras, October, 1908, *Barnes & Land 455, 458* (Y.).

OAXACA: near Miahuatlan, 1895, *E. W. Nelson 2530* (U. S.).

PUEBLA: banks along Avenida Hidalgo and path to barranca, Tezuitlan, October, 1908, *Barnes & Land 541, 542* (Y.); Santa Barbara, near Puebla, November, 1909, *Frère Nicolas 20* (Y.).

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[6] Bull. Herb. Boissier **7**: 393. 1899.

[7] Deutsch. Südpolar-Exped. **8**: 64. 1906.

[8] Nyt Mag. Naturv. **49**: 86. 1911.

[9] See Taylor, N. Sci. Bull. Mus. Brooklyn **2**: 62. 1914.

Vera Cruz: Orizaba, 1855, *F. Müller 2245* (N. Y., listed by Gottsche in Mex. Leverm. 268. 1863); Mirador, April, 1857, *C. Mohr* (N. Y.); Orizaba, January, 1892, *J. G. Smith* (N. Y.).

Jamaica: near Hardware Gap, July, 1903, *A. W. Evans 176* (Y.).

Ecuador: near Baños, *R. Spruce* (distributed in Hepaticae Spruceanae).

Bolivia: Sorata, February, 1886, *H. H. Rusby 3005* in part (N. Y., listed by Spruce as "*M.* nova species?" in Mem. Torrey Club **1**: 140. 1890).

Chile: Renca, near Santiago, February, 1901, *G. T. Hastings 318* (U. S.); Straits of Magellan, 1866-67, *A. Cunningham 105, 135* (N. Y.); Punta Arenas, November, 1895, *P. Dusén* (N. Y., first determined by Stephani as *M. Berteroana;* afterwards listed as "*M. tabularis*" in Bihang t. K. Sven. Vet.-Akad. Handl. **26**^{3}, No. 17: 8. 1901); Cordilleras of Patagonia, February, 1897, *J. B. Hatcher* (Y., listed by the writer in Bull. Torrey Club **25**: 424. 1898); Punta Arenas, February, 1906, *R. Thaxter* 64, 65 (H., Y.).

The following additional stations, recorded in the literature, are likewise of interest:

Costa Rica: Volcano of Poas, *H. Pittier 6021* (listed by Stephani in Bull. Soc. Bot. Belgique **31**: 180. 1892).

Colombia: Bogota, 1859, *A. Lindig 1700, 1701, 1717* (listed by Gottsche in Ann. Sci. Nat. Bot. V. **1**: 186. 1864).

Venezuela: Colonia Tovar, *Moritz 134* (listed, but erroneously ascribed to Colombia, in Syn. Hep. 789. 1847; also listed by Hampe in Linnaea **20**: 333. 1847).

Ecuador: Tunguragua, *R. Spruce* (listed in Trans. Bot. Soc. Edinburgh **15**: 560. 1885).

As its name implies, *Marchantia polymorpha* is an exceedingly variable species, and a full account of its numerous forms is given by Nees von Esenbeck.[10] He recognizes two principal varieties, A. *Communis* and B. *Alpestris,* and under each variety he describes a series of sub-varieties and groups of more inferior rank. A. *communis* is prevalent at lower altitudes but sometimes ascends to higher elevations in sheltered localities; B. *alpestris* is restricted to mountainous regions. A. *communis* is characterized by a lax habit and by female receptacles having elongated rays and long slender stalks; B. *alpestris,* by a compact habit and by female receptacles having shorter rays and shorter and thicker stalks.

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[10] Naturg. Europ. Leberm. **4**: 65-71. 1838.

Nees von Esenbeck's varieties and subordinate groups are accepted without question in the Synopsis Hepaticarum, but later writers have largely neglected them. There are two, however, which appear from time to time in local lists and taxonomic works. One of these is A. *communis, α aquatica,* usually quoted as "var. *aquatica* Nees," and the other is B. *alpestris,* quoted as "var. *alpestris* Nees." The differences between these two so-called varieties are indeed striking. In var. *aquatica* the thallus shows a distinct median band on the upper surface usually pigmented with purple and associated with the absence of air-

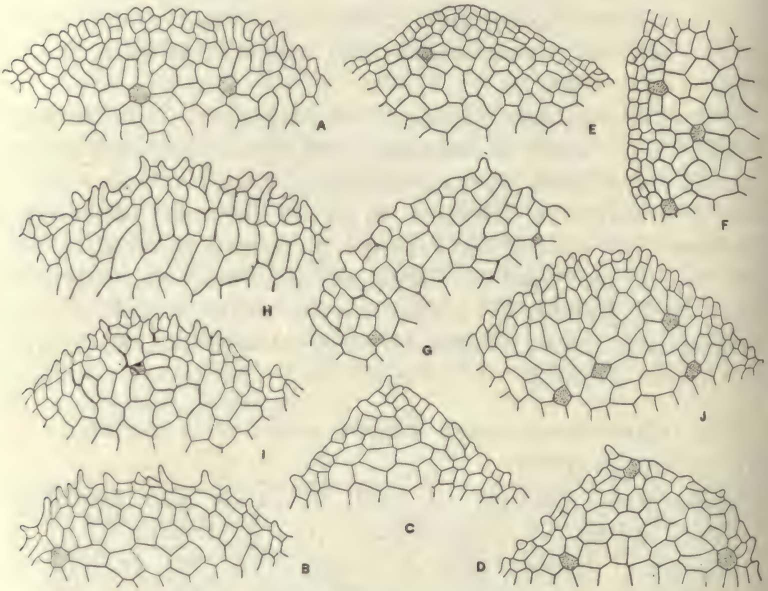

FIG. 1. MARCHANTIA POLYMORPHA L.

Appendages of ventral scales, x 100; F represents the basal portion of an appendage; the other figures represent apical portions. A. Opdal, Norway, *J. Hagen,* in V. Schiffner's Hep. Europ. Exsic. *15,* type of var. *mamillata* Hagen. B-D. New Haven, Connecticut, *A. W. Evans.* E, F. Wilbraham, Massachusetts, *E. A. Chapin,* forma *aquatica.* G. Mount Hood, Oregon, *J. Röll,* type of *M. oregonensis* Steph. H. Oaxaca, *E. W. Nelson 2530.* I. Jamaica, *A. W. Evans 176.* J. Patagonia, *J. B. Hatcher.*

chambers, as Schiffner has pointed out; in var. *alpestris* the thallus is uniformly green on the upper surface, and air-chambers are everywhere present. In var. *aquatica* the margin of the thallus is entire or nearly so, and the upper surface completely lacks epidermal papillae or bears them very rarely; in var. *alpestris* the margin of the thallus is more or less denticulate from projecting cells, and epidermal papillae occur in greater or less abundance in the marginal portions. In var. *aquatica* the appendages of the ventral scales are entire or nearly so, and the spreading rhizoids are smooth; in var. *alpestris* the appendages are distinctly denticulate, and the spreading rhizoids tuberculate.

About fifteen years ago another so-called variety was distinguished by Hagen under the name var. *mamillata.* It was based on a supply of specimens collected by its author at Opdal in Norway and distributed by Schiffner in Hep. Europ. Exsic. *15.* Apparently Hagen himself did not publish his variety. Schiffner[11] did so, however, and quoted Hagen's original diagnosis, as follows: "Cellulae epidermicae et frondis dorsalis et carpocephali acute mamillosae." In commenting on this diagnosis Schiffner showed that the mamillose appearance, so strongly emphasized, was due to epidermal papillae and that these were restricted to the marginal portions of the thallus. He showed further that the female receptacles in all forms of *M. polymorpha* were mamillose in Hagen's sense. Var. *mamillata,* therefore, is based on exceedingly vague characters and has little or nothing to distinguish it from var. *alpestris.*

Although var. *aquatica* and var. *alpestris* are at first sight so distinct from each other they are connected by intermediate forms, and their differences seem to be associated with definite differences in environmental conditions. They represent, therefore, modifications rather than varieties in the taxonomic sense. Probably the most logical disposition to make of them is to regard them as forms, as Müller[12] has done, and to cite them as forma *aquatica* (Nees) K. Müll. and forma *alpestris* (Nees) K. Müll., respectively. Other forms, less distinct than these, might likewise be distinguished, but it would hardly be a profitable task to designate them by names.

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[11] Lotos **49**: 93. 1901.

[12] Rabenhorst's Kryptogamen-Flora **6**: 306. 1907.

Of the various synonyms quoted under *M. polymorpha* the first six require no special mention, since no question has arisen about them for many years. In fact three of these synonyms were never published adequately by their author at all, and nothing would now be known about them if Nees von Esenbeck had not included them among the synonyms of his varieties and forms of *M. polymorpha.* It is perhaps worthy of note, however, that *M. stellata* and *M. umbellata* were based on female and male specimens, respectively, showing how deep an impression the very different receptacles made on the early observers. The last three synonyms deserve a few words of comment.

The first, *M. vittata,* was described from specimens collected by its author on the island of Madeira. It is characterized by the presence of a longitudinal median band on the thallus, deep purple in color, and by a female receptacle bearing three to ten terete rays. The authors of the Synopsis Hepaticarum cite the species but do not number it, thus implying that they doubt its validity. They refer it with some question to one of the varieties of *M. polymorpha.* Although type specimens of *M. vittata* have not been available for study there can be little doubt that the species should be referred to *M. polymorpha* forma *aquatica,* on account of its median purple band. This conclusion is supported by the fact that Schiffner[13] quotes *M. polymorpha* var. *aquatica* definitely from Madeira, although he makes no mention of *M. vittata.* In fact the writer has found no references to the species later than the date of the Synopsis.

The next species, *M. Syckorae,* was based on female specimens collected by Syckora and by Corda in Bohemia. Nees von Esenbeck, without having seen specimens, gave a description of the species based on Corda's notes and figures. The features emphasized are the stellate female receptacles with terete rays and the monocarpous involucres, each consisting of two distinct membranes divided into six lanceolate acuminate lobes with serrate-dentate margins. In spite of the peculiarities in the involucre Nees von Esenbeck suspected that *M. Syckorae* was nothing but a form of *M. polymorpha,* and yet it is cited and numbered in the Synopsis Hepaticarum. Many years later Dědeček[14] definitely included *M. Syckorae* among the synonyms

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[13] Oesterr. Bot. Zeitschr. **51**: 116. 1901.

[14] Arch. Naturw. Landesdurchf. Böhmen, Bot. **5**^{4}: 20. 1886.

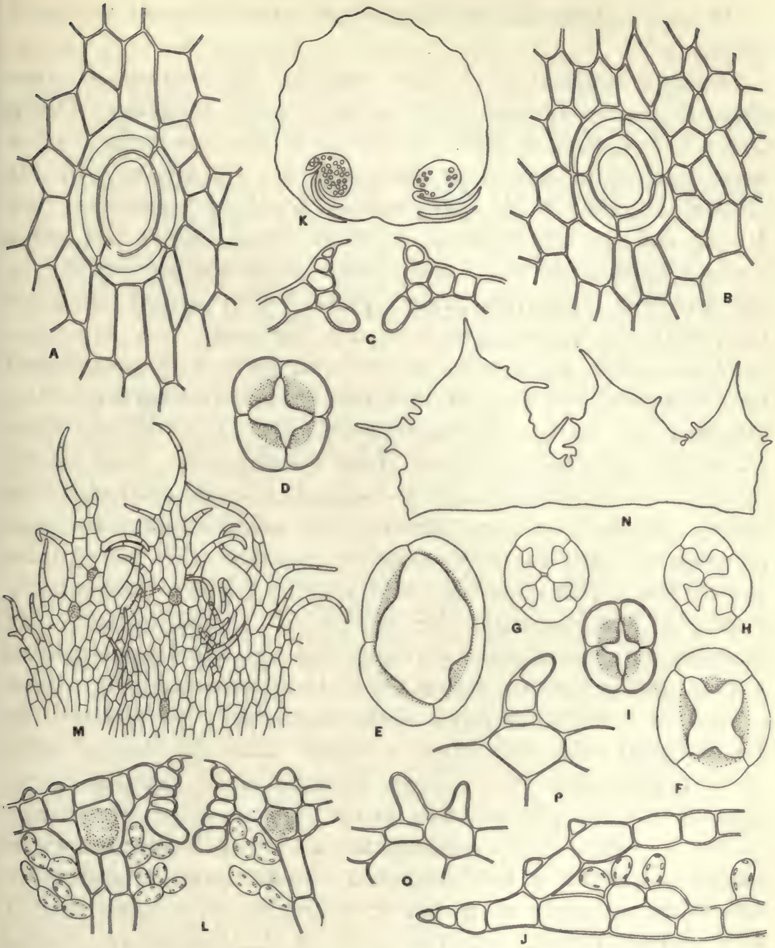

FIG. 2. MARCHANTIA POLYMORPHA L.

Anatomical details. A, B. Epidermal pores of thallus, surface view, x 225. C. Pore in cross-section, x 225. D-I. Inner openings of pores, x 225. J. Marginal portion of thallus, in section, showing two epidermal papillae, x 225. K. Stalk of male receptacle, cross-section near base, x 40. L. Female receptacle, section of part of disc, showing a pore and three epidermal papillae, x 225. M. Part of involucre, x 50. N. Part of cupule, showing three lobes, x 50. O, P. Epidermal papillae from cupule, in section, x 225. A, D. Opdal, Norway, *J. Hagen,* in V. Schiffner's Hep. Europ. Exsic. *15,* type of var. *mamillata* Hagen. B, I, J. Jamaica, *A. W. Evans.* C. Oaxaca, *E. W. Nelson 2530.* E, L-P. New Haven, Connecticut, *G. E. Nichols, A. W. Evans.* F-H. Wilbraham, Massachusetts, *E. A. Chapin,* G and H representing forma *aquatica.* K. Eberswalde, Germany, *A. W. Evans.*

of *M. polymorpha* and Schiffner[15] has since followed the same course.

The type material of the last synonym, *M. oregonensis,* consists of a series of male specimens collected on Mount Hood, Oregon, by J. Röll, in 1888. A portion of the type in the Underwood herbarium has been examined by the writer. In his original account of *M. oregonensis,* Stephani emphasizes the dentate and spinose appendages of the ventral scales and states that he knows no other *Marchantia* of temperate regions in which similar appendages occur. Howe[16] soon pointed out, however, that the appendages in many European and American specimens of *M. polymorpha* agreed with those of *M. oregonensis* and expressed the opinion that the peculiarity emphasized by Stephani had no specific significance. FIG. 1, G, drawn from *M. oregonensis,* fully supports Howe's statements. As a matter of fact the appendages are not deeply enough toothed to be called "spinose" or even "dentate"; it would be more accurate to describe them as denticulate or crenulate. In his Species Hepaticarum, published the same year as Howe's observations, Stephani[17] still maintains the validity of *M. oregonensis.* He describes the appendages as variously and remotely dentate-spinose and states that they are composed of small subequal cells. Here again FIG. 1, G brings out a slight inaccuracy, by showing that the marginal cells are distinctly smaller than the interior cells. In his critical notes he no longer emphasizes the features of the appendages but calls attention to the cruciate internal openings of the epidermal pores, stating that no other North American species has pores of this character. In the material studied by the writer no pores of a distinctly cruciate type were found; they agreed, rather, with the pores of *M. polymorpha* forma *alpestris,* as shown in FIG. 2, D. Since both of the distinctions relied upon by Stephani thus break down there seems to be no reason why *M. oregonensis* should not be considered a simple synonym of *M. polymorpha.*

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[15] Engler & Prantl, Nat. Pflanzenfam. 1^3: 37. 1893.

[16] Mem. Torrey Club 7: 62. 1899.

[17] Bull. Herb. Boissier 7: 531. 1899.

2. MARCHANTIA PLICATA Nees & Mont.

Marchantia (?) *plicata* Nees & Mont.; Montagne, Ann. Sci. Nat. Bot. II. 9: 43. 1838.

Marchantia lamellosa Hampe & Gottsche; G. L. & N. Syn. Hep. 527. 1846.

Marchantia vulcanica Spruce, Trans. Bot. Soc. Edinburgh 15: 559. 1885 (as synonym).

Thallus green, not glaucous, often more or less pigmented with purple on the lower surface, usually 1-1.5 cm. wide, often 6-8 cm. long or even more, occasionally dichotomous, the successive forks usually about 2 cm. apart, texture delicate, margin entire; epidermis composed of thin-walled cells, averaging about 20μ in length and 13μ in width, papillae absent; pores (with their surrounding cells) mostly 65-80μ long and 50-60μ wide, gradually decreasing in size toward the margin, the smallest measuring about 50 x 40μ, surrounded by three or (usually) four rows of cells (two rows being in the lower series), each row being usually composed of four cells, inner opening mostly four-sided, with slightly convex to distinctly concave sides, somewhat roughened by a resinous deposit; air-chambers low, isodiametric or somewhat elongated, their boundaries very indistinct when viewed through the epidermis, everywhere present (except close to the margin), rows of photosynthetic cells usually less than three cells long; compact ventral tissue mostly twenty to twenty-five cells thick in the median portion, destitute of slime cells and sclerotic cells, the cell-walls slightly thickened and with distinct pits; ventral scales in four to six rows on each side of the thallus, median and marginal scales in distinct rows, laminar scales in two to four indistinct rows, scales often pigmented with purple, marginal scales more or less imbricated and usually projecting beyond the margin; appendages of median scales orbicular-ovate to orbicular, mostly 0.65-0.9 mm. long and 0.65-0.8 mm. wide, somewhat narrowed toward the rounded and sometimes apiculate apex, margin minutely and irregularly denticulate or crenulate, a tooth sometimes consisting of an entire cell borne on a slightly projecting stalk cell, cells rapidly decreasing in size toward the margin, median cells mostly 70-90μ in length and 40-60μ in width, marginal cells only 25-50μ in length and 12-20μ in width, cells containing oil-bodies 15-30μ in diameter, usually about ten on each appendage, restricted to submarginal portions: male receptacle borne on a stalk 2-3 cm. long, with two rhizoid-furrows, destitute of dorsal air-chambers, the disc mostly 1-1.2 cm. broad (when well developed), deeply lobed, the lobes or rays mostly eight (sometimes nine or ten), the two basal rays usually separated by a wider sinus than the others, 2-4 mm. long, rounded at the apex and with thin wavy margins, covered ventrally with densely imbricated scales in several rows: female receptacle borne on a stalk 6-8 cm. long (when well developed), with two rhizoid-furrows and a single broad dorsal band of air-chambers, the disc mostly 1.2-1.6 cm. broad, deeply lobed, the lobes or rays spreading at maturity, mostly eleven (sometimes nine or ten), 5-6 mm. long, the two basal rays usually shorter than the others and separated by a wider sinus, rays terete, rounded at the apex, destitute of surface-papillae; involucre sometimes pigmented, deeply and irregularly lobed, the lobes long-acuminate and dentate to ciliate on the sides: spores pale yellow, 12-14μ in diameter, smooth or nearly so; elaters 3-5μ wide, bispiral: cupules deeply lobed, the lobes as in *M. polymorpha,* outer surface with epidermal papillae. (FIGS. 3, 4.)

The species seems to be confined to the high mountains of South America. The following specimens have been examined:

COLOMBIA: Boqueron, Bogota, *W. Weir* (N. Y.).

ECUADOR: Quito, December, 1847, *W. Jameson* (N. Y., listed by Mitten as *M. Berteroana* in Jour. Bot. & Kew Misc. **3**: 361. 1851); Pichincha, *R. Spruce* (distributed in Hepaticae Spruceanae).

PERU: Cuzco, July, 1911, *H. W. Foote* (Y., listed by the writer as *M. lamellosa* in Trans. Conn. Acad. **18**: 299. 1914); same locality, September, 1914, *Mr. & Mrs. J. N. Rose 19060* (N. Y., Y.); Ollantaytambo, May, 1915, *Cook & Gilbert 672* (U. S., Y.); San Miguel, Urubamba Valley, June, 1915, *Cook & Gilbert 1162* (U. S., Y.); Lucumayo Valley, June, 1915, *Cook & Gilbert 1321* (U. S., Y.).

BOLIVIA: between Chupé and Janacaché, province of Yungas, *A. d'Orbigny 209* (M., type); Sorata, February, 1886, *H. H. Rusby 3005* in part (N. Y., listed by Spruce as "*M. plicata* Nees?" in Mem. Torrey Club **1**: 140. 1890); Songo, November, 1890, *M. Bang 910* (N. Y., U. S., Y., listed by Rusby as *M. polymorpha* in Mem. Torrey Club **4**: 274. 1895); Sorata, September, 1901, *R. S. Williams 2144* (N. Y., Y.).

The type specimen of *M. lamellosa* was collected at the following locality:

VENEZUELA: Paramo de Mucuchies, *Moritz 45* (listed, but erroneously ascribed to Colombia, in Syn. Hep. 527. 1846; also listed by Hampe in Linnaea **20**: 333. 1847).

The present species was based on a specimen without receptacles or gemmae. When originally described its generic position was considered doubtful, but the authors of the Synopsis saw clearly that it represented a *Marchantia* and suggested its relationship to *M. polymorpha.* Unfortunately the absence of receptacles made a positive conclusion impossible, and they were therefore obliged to place it among the species "incertae sedis." A portion of the type material from the Montagne herbarium, kindly forwarded by M. Paul Hariot, has been carefully com-

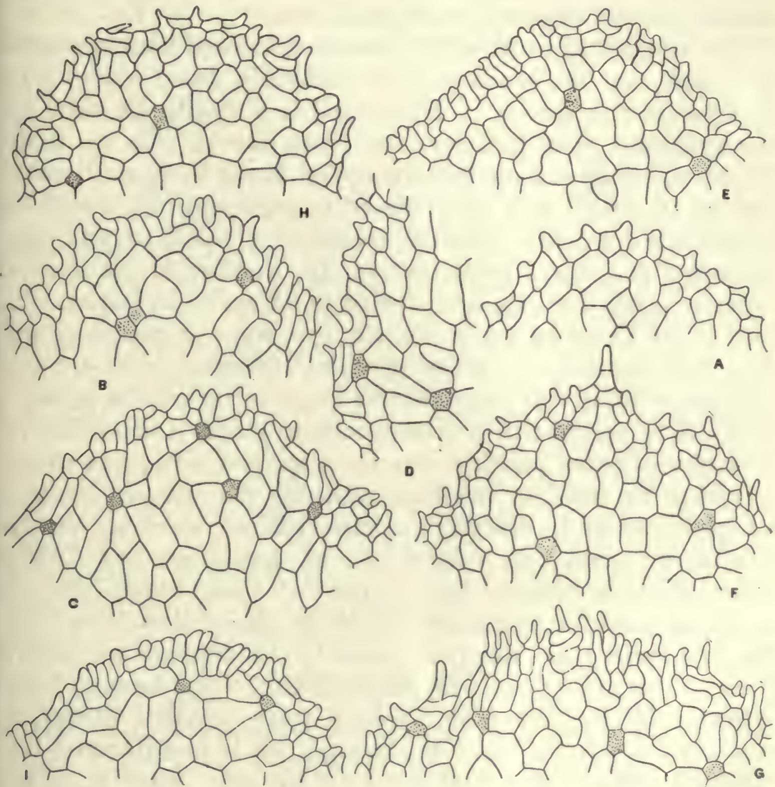

FIG. 3. MARCHANTIA PLICATA Nees & Mont.

Appendages of ventral scales, x 100. D represents the basal portion of an appendage; the other figures represent apical portions. A. Ecuador, *W. Jameson.* B-D. Peru, *H. W. Foote.* E-G. Peru, *Cook & Gilbert 672, 1162, 1321.* H. Bolivia, *A. d'Orbigny,* type. I. Bolivia, *M. Bang 910.*

pared with the other specimens cited above. The epidermal cells are unusually delicate and are slightly smaller than the averages given, measuring perhaps 18 x 10μ, but the epidermal pores and ventral scales agree very closely with those of the other specimens. It is clear, therefore, in the writer's opinion, that all the specimens cited represent the same species.

The original material of *M. lamellosa* has not been available for study, but the specimen from Colombia, listed above, was referred to this species by Mitten and is evidently the same as the specimens from Ecuador, Peru, and Bolivia. On the basis of this specimen and the full description in the Synopsis Hepaticarum, *M. lamellosa* is here reduced to synonymy. It should be noted, however, that Stephani considers it valid, so that this reduction is perhaps unwarranted. He ascribes to the species cruciate pores and papillate rays on the female receptacles. In one of the Peruvian specimens, No. 672, some of the pores are as cruciate as those of *M. oregonensis,* but other pores are not cruciate at all, so that a considerable range of variation is present. The lack of receptacles in these specimens makes it impossible to determine whether papillate rays are associated with pores which approach the cruciate condition, although the constant absence of papillae in all the fruiting specimens studied, which are clearly the same as No. 672, makes such an association improbable. Even if papillae occasionally occurred they would hardly afford a basis for a specific separation. Stephani cites *M. lamellosa* from the type locality and also from Ecuador (Chimborazo and Altar, *Hans Meyer*).[18] He cites *M. plicata* from the type locality, from Ecuador (Quito, *Ortoneda, Spruce*), from Colombia (*Lindig*), and from Venezuela (Merida, *Moritz*). It is probable that the Lindig specimens are those listed by Gottsche under *M. polymorpha* and that the Moritz specimens are those doubtfully referred by Hampe[19] to *M. Berteroana.* Of course, in the absence of the specimens themselves, this matter can not be definitely decided.

Although *M. plicata* and *M. polymorpha* are closely related species it is usually easy to distinguish them. Some of the differential characters, however, are vague and subject to variation. When *M. plicata* is well developed the thallus and the sexual receptacles are larger than in the most robust forms of *M. polymorpha,* approaching or equalling in this respect the more southern *M. Berteroana.* The thallus also shows a tendency to fork at infrequent intervals, so that it presents the appearance of being more elongated than in *M. polymorpha.*

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[18] See Meyer, In den Hoch-Anden von Ecuador 517. Berlin, 1907.

[19] Linnaea 20: 333. 1847.

The lack of epidermal papillae on the rays of the female receptacle seems also to be a distinguishing character. In fact papillae of this type are restricted to the outer surface of the cupules. In spite of the large size of the thallus the epidermis of *M. plicata* is unusually delicate in texture and the air-chambers unusually low.

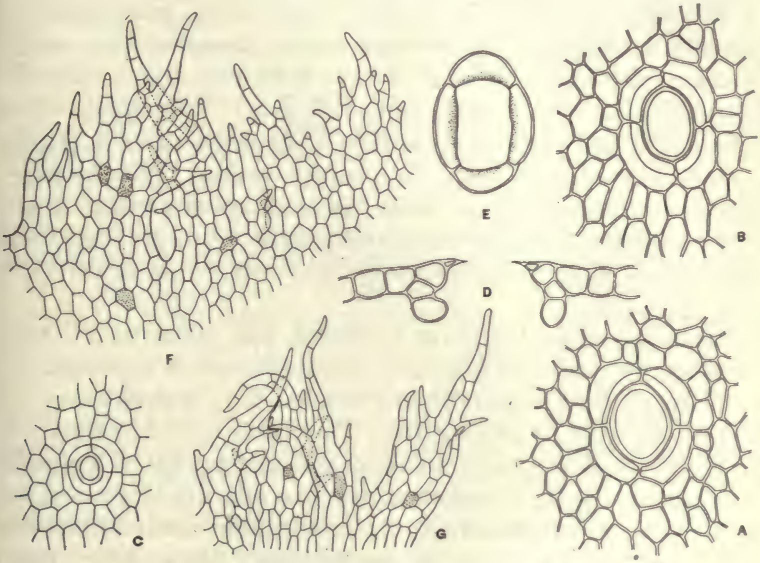

FIG. 4. MARCHANTIA PLICATA Nees & Mont.

Anatomical details. A-C. Epidermal pores of thallus, surface view, x 225. D. Pore in cross-section, x 225. E. Inner opening of pore, x 225. F, G. Two parts of the same involucre. A, B, D, E. Peru, *Cook & Gilbert 1162, 1321.* C. Bolivia, *A. d'Orbigny,* type. F, G. Colombia, *W. Weir.*

The ventral scales exhibit considerable variation with respect to size and amount of pigmentation. In typical examples the ventral surface is almost covered with purple scales, but this condition is by no means constant; the scales may only partially cover over the surface and the pigmentation may be very slight.

The crowded marginal scales, however, visible from above, seem to be a constant feature, although these scales may not be any more conspicuous than in *M. polymorpha.* The appendages of the ventral scales, as in other species, yield some of the most important characters (FIG. 3). The small marginal cells are exceedingly irregular, forming various angles with the periphery of the appendage and often projecting in the form of blunt teeth. Frequently a projecting cell will be borne on a broader basal cell, a two-celled tooth of a peculiar type being thus produced. Usually the difference in size between the marginal cells and the interior cells is very marked, but the difference is less when the appendages are poorly developed (FIG. 3, A). The apices of the appendages are especially variable. In some cases a distinct apical tooth two cells long is present, making the appendage apiculate (FIG. 3, F); in other cases the apical tooth is hardly distinguishable from the neighboring teeth (FIG. 3, G); in still other cases there is no indication whatever of an apical tooth (FIG. 3, H, I).

When the appendages are compared with those of *M. polymorpha* they are found to have many features in common. In both species they are similar in form and show a decrease in the size of the cells in passing from the middle to the margin; in both species the apex is variable and the margin is normally denticulate. In *M. plicata,* however, the cells are larger and the decrease in size more abrupt, the denticulation tends to be more pronounced, owing largely to the frequency of two-celled teeth, and the marginal cells tend to be more irregular. Although these differences are of a comparative nature and subject to variation, they will usually be found serviceable in separating the species.

3. MARCHANTIA BERTEROANA Lehm. & Lindenb.

Marchantia Berteroana Lehm. & Lindenb.; Lehmann, Pug. Plant. **6**: 21. 1834.

Marchantia tabularis Nees, Naturg. Europ. Leberm. **4**: 71 (footnote). 1838.

Marchantia cephaloscypha Steph. Hedwigia **22**: 51. 1883.

Thallus green or bluish green, sometimes glaucous, often more or less pigmented with purple or brownish near the margin and on the lower surface, usually 1-1.5 cm. wide and 6-8 cm. long, variously dichotomous, the successive forks sometimes 2-3 cm. apart but often closer together, texture usually tough and leathery, margin entire or minutely and irregularly denticulate or crenulate, more or less plicate; epidermis composed of cells with thin or slightly thickened walls, mostly 20-60μ long (averaging about 32μ) and 16-24μ wide (averaging about 19μ), papillae absent; pores (with their surrounding cells) mostly 60-80μ long and 50-60μ wide, surrounded usually by six rows of cells (three in each series), each row being usually composed of four cells, inner opening cruciate, the bounding cells commonly four (rarely three or five), slightly roughened; air-chambers of medium height, usually a little longer than broad, their boundaries indistinct when viewed through the epidermis, present everywhere, rows of photosynthetic cells usually three or four cells long; compact ventral tissue about twenty-five cells thick in the median portion, destitute of slime cells and sclerotic cells, usually thin-walled and with indistinct pits; ventral scales in two rows, median and laminar, no marginal scales being present, scarcely imbricated, pale or brownish; appendages of median scales orbicular-ovate to broadly orbicular, usually somewhat narrowed toward the rounded apex, mostly 0.6-1 mm. in length and about the same in width, margin minutely and often regularly crenulate or denticulate from projecting cells, cells showing an abrupt decrease in size toward the margin, median cells mostly 60-85μ long and 20-40μ wide, marginal cells (in one, two, or three rows) mostly 12-20μ long and 8-12μ wide, cells containing oil-bodies about 20μ in diameter, about five on each appendage, restricted to submarginal portions: male receptacle borne on a stalk 1-5 cm. long with two rhizoid-furrows, destitute of dorsal air-chambers, the disc about 1 cm. in diameter, more or less deeply lobed when well developed, the lobes or rays mostly eight, usually 2-3 mm. long, rounded at the apex and with thin wavy margins, covered ventrally (except in the marginal portions) with imbricated scales in several rows, sinuses usually subequal in width: female receptacle borne on a stalk mostly 3-8 cm. in length, with two rhizoid-furrows and a broad dorsal band of air-chambers, the disc mostly 0.8-1 cm. broad, deeply lobed, the lobes or rays spreading at maturity, mostly nine, 2-3 mm. long, separated by subequal sinuses, terete, rounded, destitute of epidermal papillae; involucre much as in *M. polymorpha:* spores brownish yellow, mostly 8-10μ in diameter, smooth; elaters about 5μ wide, bispiral: cupules deeply lobed, the lobes as in *M. polymorpha,* outer surface with epidermal papillae. (FIG. 5.)

A widely distributed species, restricted (according to our present knowledge) to the Southern Hemisphere. The following South American specimens have been examined:

ARGENTINA: Buenos Aires, without date, *Twiedie* (H.); La Plata, collector and date unknown (H.).

CHILE: Concepcion, November, 1905, *R. Thaxter, 16, 66* (H., Y.); Port Corral, January, 1906, *R. Thaxter, 62, 74, 92* (H., Y.); Hermite Island, Cape Horn, 1843, *J. H. Hooker* (H.).

JUAN FERNANDEZ: without definite localities, 1830, *C. Bertero* (H., N. Y.), type); *H. N. Moseley* (N. Y., Challenger Expedition); 1901, *G. T. Hastings 218* (N. Y., U. S.).

FALKLAND ISLANDS: without definite locality, 1843, *J. D. Hooker* (H.).

The following specimens from other regions have likewise been examined:

ST. HELENA: without definite locality or date, *J. Melliss* (N. Y.); 1844, *J. D. Hooker* (N. Y.); February, 1890, *W. H. & A. H. Brown 264* (U. S., United States Eclipse Expedition to Western Africa, listed as *M. tabularis* by Stephani in Bull. Herb. Boissier 7: 1899).

CAPE COLONY: Table Mountain, *F. Krauss* (N. Y.); Montague Pass, *J. C. Bruetel* (N. Y.); without definite localities or dates, *W. H. Harvey* (N. Y.), *Capt. Rabenhorst* (Y.).

AUSTRALIA: Victoria, *Robertson 633* (N. Y.); Swan River, 1846, *J. Drummond* (H.); without definite locality, *F. von Müller* (H., Y.).

TASMANIA: without definite localities, 1823, *Lawrence* (N. Y.); 1838, *R. Gunn* (N. Y.); no date, *W. Archer* (N. Y.); western mountains, no date, *Lawrence* (N. Y.); Tasman Peninsula, roadside from Long Bay to Tarrand, February, 1899, *1956b* (H., distributed by E. Levier as *M. cephaloscypha*).

NEW ZEALAND: without definite localities, no date, *A. Sinclair* (N. Y.); 1881, *E. Craig* (Y.); no date, *J. Remy* (N. Y., distributed by C. Roumeguere as *M. nitida*); Waikehi, *A. Sinclair* (H.); Raipara, 1850, *S. Mossmann* (H.); Point Cooper, collector and date unknown (N. Y.); North Island, 1904, *W. A. Setchell 32* (Y.); Lord Auckland's Group, November, 1840, *J. D. Hooker* (H.); Campbell Island, November, 1840, *J. D. Hooker* (H.); without definite locality, date, or collector's name (B., type of *M. cephaloscypha*).

Other South American stations of interest, cited in the literature, are the following:

ARGENTINA: Staten Island, Tierra del Fuego, *C. Spegazzini* (listed by Massalongo in Nuovo Gior. Bot. Ital. **17**: 258. 1885).

CHILE: San Augustin and San Francisco del Monte, *F. J. F. Meyen* (listed in Syn. Hep.); Otway Gulf, *P. Savatier* (listed and figured as *M. tabularis* by Bescherelle and Massalongo in Compt. Rend. Miss. Sci. Cap Horn **5**: 247. *pl. 4, f. 17.* 1889).

The identity of *M. Berteroana* and *M. tabularis* was established by Schiffner, although Nees von Esenbeck, in proposing *M. tabularis,* recognized its close relationship with the older species. *M. Berteroana* was based on specimens collected by Bertero on the island of Juan Fernandez, while the type material of *M. tabularis* came from Table Mountain in Cape Colony. The Synopsis Hepaticarum recognizes both species; it cites *M. Berteroana* from Chile and St. Helena, as well as from the type locality, and gives Devil's Peak in Cape Colony as a second station for *M. tabularis.* Under *M. Berteroana* three varieties are recognized: α, from Juan Fernandez, β, *biflora,* from Chile; and γ, *anactis,* from Juan Fernandez and St. Helena. In α, according to the description, the rays of the female receptacle are one third longer than the involucres, the latter enclosing three to five flowers; in β, the rays are the same as in α but are fibrillose, while the involucres usually contain only two flowers; in γ, the rays do not project beyond the involucre at all.

In discussing *M. Berteroana,* Schiffner[20] points out that the differences relied upon by Nees von Esenbeck in separating *M. tabularis* are of no significance and that the same thing is true of the differential characters assigned to the three varieties of *M. Berteroana.* He points out further certain mistakes in the original description of this species and also in the description given in the Synopsis. He based his conclusions on a large series of original and authentic specimens, several of which have been studied by the present writer, and there seems to be no reason for doubting the accuracy of his observations.

Schiffner was apparently the first to give a satisfactory description of the scale appendages in *M. Berteroana.* He calls attention to the finely crenulate margin, to the border of very small cells in one or two rows, and to the sharp distinction in size between the marginal cells and the cells which adjoin them. To *M. polymorpha* he assigns appendages which are minutely but sharply denticulate, and adds that the cells gradually increase in size in passing from the margin to the median portion. In most cases the distinctions given by Schiffner apply very definitely, but in the forma *aquatica* of *M. polymorpha* (FIG. 1, E, F) the appendages are usually destitute of distinct denticulations, the

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[20] Oesterr. Bot. Zeitschr. **46**: 41-44, 100-103. 1896.

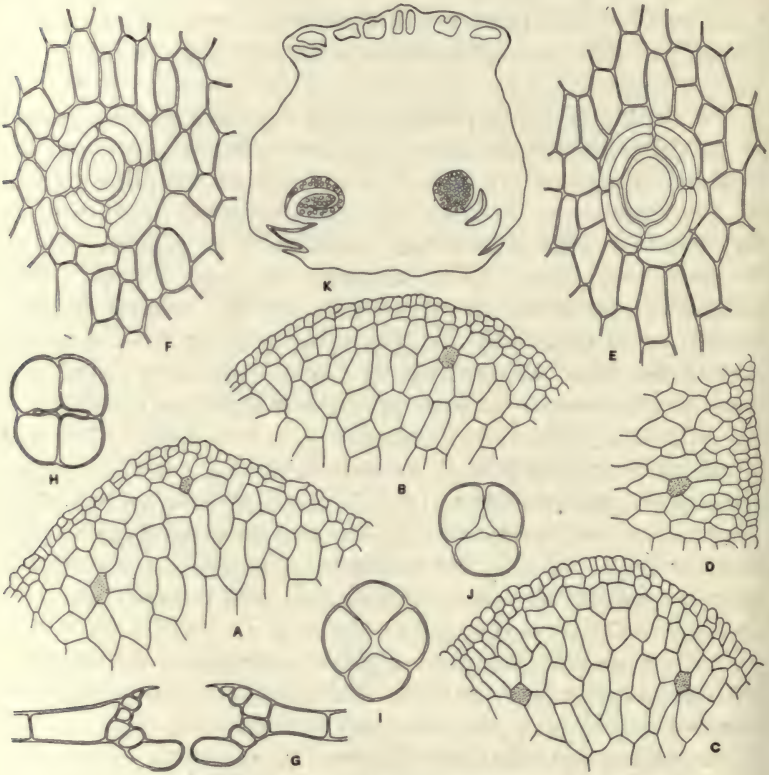

FIG. 5. MARCHANTIA BERTEROANA Lehm. & Lindenb.

Appendages of ventral scales and other anatomical details. A-D. Appendages of ventral scales, x 100: D represents the basal portion of an appendage; the other figures represent apical portions. E, F. Epidermal pores of thallus, surface view, x 225. G. Pore in cross-section, x 225. H-J. Inner openings of pores, x 225. K. Stalk of female receptacle, cross-section near base, x 40. A. Juan Fernandez, *G. T. Hastings 218*. B, E, G, H. Chile, *R. Thaxter 66*. C, D. Cape Colony, *Capt. Rabenhorst*. F, I-K. Australia, *F. von Müller*.

entire or crenulate margin closely simulating that of *M. Berteroana.* Even here, however, the gradual decrease in the size of the cells as the margin is approached is in contrast to the abrupt decrease found in *M. Berteroana.*

In habit and in general appearance *M. Berteroana* resembles *M. polymorpha* very closely, and it is not surprising that the early observers failed to distinguish it as a species. The thallus, to be sure, is more robust, it tends to be thicker and more leathery than in the northern species, and the rays of the female receptacle tend to be shorter, but these differences are not always pronounced. There are, however, several distinctive features, in addition to the scale-appendages, which deserve to be emphasized. In the first place *M. Berteroana* seems to lack marginal scales altogether. Sometimes the laminar scales form a vague double row, some of the scales being nearer the margin than the others, but even under these conditions there is quite a little space between the outermost scales and the margin. In most cases the row of laminar scales is more definite and the region without scales is consequently wider. In *M. polymorpha* the marginal scales are apparently always present, although they do not always attain the same degree of development. *M. Berteroana* is further distinguished by its cruciate epidermal pores, and by its lack of epidermal papillae on both thallus and female receptacle. The lack of marginal scales, the crenulate scale appendages, and the cruciate pores will serve also to distinguish *M. Berteroana* from *M. plicata,* although there is no evidence as yet that their ranges overlap.

The writer has fortunately been able to examine an original specimen of *M. cephaloscypha.* The species was based on gemmiparous material with young female receptacles collected somewhere in New Zealand, neither the date nor the collector's name being given. A few years later Stephani[21] referred to his species a series of specimens from various parts of Australia and was able to add the characters derived from mature female receptacles and ripe capsules. In his Species Hepaticarum,[22] in addition to New Zealand and Australia, he cites Tasmania, Fuegia, Patagonia and Chile as localities for the plant and notes that it is not rare. Still later he[23] quotes stations on Juan Fernandez, the Chilean island of Chiloé, and the Falkland Islands. He therefore gives the species a very extensive distribution in the Southern Hemisphere. It has already been noted that he does not credit *M. Berteroana* to America at all, the only specimens which he cites being from Cape Colony, the Transvaal, and the island of St. Helena.

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[21] Hedwigia **28**: 265. 1889.

[22] Bull. Herb. Boissier **7**: 391. 1899.

In his descriptions of *M. cephaloscypha* Stephani emphasizes the cruciate pores, the large scale-appendages bordered with very small cells, the nine-rayed female receptacles with smooth and terete rays, the eight-lobed male receptacles, and the spinose cupules. It will at once be noted that all of these features are found in *M. Berteroana.* There are, however, certain discrepancies between Stephani's descriptions and the account of *M. Berteroana* given above. He states, for example, in his original description that the cupules are contracted at base and apex and that the ventral scales are in three rows on each side of the thallus, one row of tongue-shaped scales being close to the margin. In his last description he still emphasizes the contracted apices of the cupules but makes no allusion to the three rows of ventral scales, perhaps because he has already given a triseriate arrangement of the scales as a generic character.

The type specimen shows that some of the specific characters emphasized by Stephani are based on misconceptions. The single cupule present, for example, is contracted at the throat but flares widely at the mouth. Even if the mouth itself were contracted this condition might easily be due to immaturity and figures of a young cupule of *M. polymorpha* by Mirbel,[24] in which the mouth is distinctly contracted, fully support this view. There are, moreover, no marginal ventral scales, although the margin, being irregularly crispate, produces the effect of scales. The appendages of the median scales are slightly crenulate and show one or two rows of marginal cells, the rays number nine in the female receptacle and are destitute of papillae, the surface of the cupule bears numerous papillae, and the pores are of the cruciate type. The writer therefore feels justified in considering *M. cephaloscypha* a simple synonym of *M. Berteroana.*

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[23] Kungl. Svensk. Vetensk.-Akad. Handl. 46^9: 5. 1911.

[24] Mém. Acad. Sci. 13: *pl. 4, f. 31, 32.* 1835.

SECTION II. **Chlamidium**

4. MARCHANTIA PALEACEA Bertol.

Marchantia paleacea Bertol. Opus. Sci. Bologna 1:242. 1817.

Marchantia papillata β italica Raddi, Mem. Soc. Ital. Modena 19:44. 1823.

Fimbriaria paleacea Corda; Opiz, Beitr. zur Naturg. 648. 1828.

Fegatella Michelii Corda, *l. c.* 649. 1828 (according to Nees von Esenbeck).

Marchantia nepalensis Lehm. & Lindenb.; Lehmann, Pug. Plant 4:10. 1832.

Marchantia nitida Lehm. & Lindenb. *l. c.* 11. 1832.

Marchantia squamosa Raddi; Lehm. & Lindenb. *l. c.* 12. 1832 (as to the East Indian plant).

Marchantia tholophora Bisch. Nova Acta Acad. Leop.-Carol. 17:989. 1835.

Marchantia calcarata Steph. Bull. Herb. Boissier 5:98. 1897.

Marchantia planipora Steph. *l. c.* 98. 1897.

Thallus pale green, often glaucous, sometimes more or less pigmented with purple, especially near the margin and on the lower surface, usually 0.5-0.8 cm. wide and 2-4 cm. long, repeatedly dichotomous, the successive forks usually 1 cm. or less apart; texture firm but scarcely leathery, margin entire; epidermis composed of cells with more or less thickened walls, sometimes in two layers, mostly 35-70μ long (averaging about 43μ) and 20-40μ wide (averaging about 30μ), papillae absent; pores (with their surrounding cells) mostly 70-90μ long and 65-85μ wide, sometimes measuring as much as 140 x 100μ, surrounded usually by six (or seven) rows of cells (three in the upper and three or four in the lower series), each row being usually composed of four cells or the innermost row of the upper series of from four to eight cells, inner opening cruciate, the bounding cells smooth; air-chambers usually high, isodiametric or slightly elongated, their boundaries indistinct when viewed through the epidermis, present everywhere, rows of photosynthetic cells often six or seven cells long but sometimes shorter; compact ventral tissue mostly twenty to thirty cells thick in the median portion, the walls sometimes pigmented, more or less thickened and showing distinct pits, sclerotic cells usually distinct, scattered, ten to twenty in a cross-section of thallus, more abundant in median region but not confined to this, slime-cells sometimes lacking, sometimes more or less abundant, especially toward the margin; ventral scales in two distinct rows, the laminar scales alternating with the median and only a little nearer the margin; appendages of median scales oblong, ovate, or ovate-orbicular, mostly 0.6-0.75 mm. long and 0.45-0.6 mm. wide, usually narrowed toward the rounded, obtuse or acute apex, margin entire or vaguely and irregularly denticulate or dentate, rarely with a basal lobe, cells showing a slight and gradual decrease in size toward the margin, median cells isodiametric to distinctly longer than broad, mostly 25-60μ long and 20-30μ wide, marginal cells mostly 30-40μ long and 12-20μ wide, very irregular, the long axis sometimes parallel with the margin and sometimes at an angle with it, cells containing oil-bodies sometimes absent altogether, when present about 20μ in diameter, one to three or more in number and indefinite in position: male receptacle borne on a stalk 5-7 mm. high, with two rhizoid-furrows, destitute of dorsal air-chambers, the disc 5-6 mm. broad, very shortly or sometimes (according to Schiffner) more deeply eight- (to twelve-) lobed, the lobes or rays rounded and with a thin wavy margin, ventral scales restricted to middle portion of disc: female receptacle borne on a stalk 2-4 cm. high, with two rhizoid-furrows and a single broad dorsal band of air-chambers, the disc about 0.5 cm. broad, usually nine-lobed, the lobes or rays spreading at maturity, 0.8-1.2 mm. long, separated by subequal sinuses or with the deep sinus between the basal ray broader than the others, flat, dilated at the truncate or emarginate apex, disc with a median hemispherical or papilliform protuberance about 0.5 mm. in diameter and nine distinct ridges corresponding with the rays; involucre much as in *M. polymorpha:* spores brownish yellow, about 34μ in diameter, with a narrow hyaline margin about 2μ wide, outer face bearing a series of low lamellae sometimes forming an indistinct reticulum; elaters mostly 6-8μ wide, bispiral; cupules with toothed lobes much as in *M. polymorpha,* but lacking epidermal papillae. (FIGS. 6-8.)

A widely distributed species in tropical and subtropical regions. The following North American specimens have been examined:

ARIZONA: Huachuca Mountains, 1910, *L. N. Gooding 824* (N. Y.).

PUEBLA: Puebla, 1906, *Frère Arsène* (N. Y.); Honey Station, October, 1908, *Barnes & Land 507* (Y.); banks along Avenida Hidalgo and path to barranca, Tezuitlan, *Barnes & Land 544* (Y.); Santa Barbara, near Puebla, November, 1909, *Frère Nicolas 3* (Y.).

VERA CRUZ: Orizaba, 1855, *F. Müller 2245* in part (N. Y.); walls of Lost River sink, Orizaba, November, 1908, *Barnes & Land 668* (Y.).

GUATEMALA: Coban, Alta Verapaz, 1310 m. alt., 1892, *H. von Tuerckheim 4960* (N. Y.).

CUBA: without definite locality, *C. Wright* (H., N. Y., Y., distributed in Hep. Cubenses as *M. domingensis*); La Perla, Oriente, 600-660 m. alt., February, 1911, *J. A. Shafer 9096* (N. Y., Y.); Monte Verde, Oriente, on walls of the ruined mansion of Lescaille, where Wright lived, August, 1913, *Brother Leon 4089* (N. Y.).

JAMAICA: Whitfield Hall Plantation, December, 1896, *W. Harris 11063* in part (N. Y.); along path from Cinchona to Clyde River, July, 1903, *A. W. Evans 14* (Y.); vicinity of Cinchona, February, 1905, *C. E. Cummings 29, 31* (N. Y., Y.); Mabess Road, May, 1906, *D. S. Johnson 46* (Y.); Morce's Gap and vicinity, August, 1906, *A. W. Evans 462* (Y.).

The following specimens from Europe, the Azores, and Asia have likewise been examined:

FRANCE: Mentone, November, 1864, *I. T. Moggridge* (N. Y.).

ITALY: without definite locality, *G. Raddi* (N. Y., labeled *M. papillata β italica*); Monte Oliveto, near Pegli in Liguria, May, 1851, *L. Caldesi* (N. Y.); near Genoa, May, 1855, *G. de Notaris* (N. Y., also distributed in Rabenhorst's Hep. Europ. *27*); Ripoli, near Florence, May, 1899, *E. Levier* (Y., Micheli's locality); Trezzo sull' Adda, province of Milan, July, 1899, *F. A. Artaria* (C. C. H.; also distributed in Schiffner's Hep. Europ. Exsic. *13*).

AZORES: San Miguel 1865, *F. D. Godman* (N. Y.); August, 1894, *C. S. Brown, 365* (N. Y.), *366* (N. Y.); August, 1894, *W. Trelease 1320* (N. Y.), *1321* (N. Y.); May and June, 1898, *B. Carriero 713, 718* (Y.). The specimens collected by Brown and Trelease have been listed by Trelease in Rept. Missouri Bot. Gard. **8**: 187. 1897. The following specimens, however, although listed under *M. paleacea,* should be referred to *Conocephalum conicum* (L.) Dumort.: *C. S. Brown 367* (from San Miguel), *368* (from Fayal), *369* (from Pico) and *W. Trelease 1317* (from Terceira). A specimen collected by B. Carriero at Furnas, in 1888, has been reported by Schiffner in Oesterr. Bot. Zeitschr. **51**: 116. 1901.

CHINA: Szechwan, no date, *E. Faber 1110* (N. Y.).

INDIA (including NEPAL): Northwest Himalayas, no date, *H. Falconer 1073* (N. Y., U. S., Y.); *J. F. Royle* (N. Y.); Nepal, *N. Wallich* (N. Y., types of *M. nepalensis, M. nitida,* and *M. squamosa*); Shagak Valley, 1847, *T. Thomson 1661, 1663* (N.

Y.); Kumaon, *Strachey & Winterbottom* (N. Y., listed by Strachey, as *M. paleacea* and *M. nitida,* in Cat. Pl. Kumaon, 234. 1906); Musooric (Northwest Himalayas), Arnigadh, December, 1895, *W. Gollan 210* (N. Y., Y., distributed by E. Levier as *M. nepalensis*).

JAPAN: Nagasaki, April-May, 1875, *R. Oldham* (N. Y., listed by Mitten, as *M. nitida,* in Trans. Linn. Soc. II. Bot. **3**: 205. 1891); Kigo, August, 1877, *Ahlberg* (B. type of *M. planipora*); Yamakita, Spidzuoka, May, 1899, *Abbé Faurie* (Y., distributed as *M. nitida* in Hép. du Japon *82*); Tokyo, May, 1897, *K. Miyake 40* (C. C. H., Y., determined as *M. diptera*); Kuzunmura, August, 1898, *K. Okudaira 26* (C. C. H); Kyoto, August, 1900, *K. Miyake* (Y., determined as *M. planipora*); Mt. Futatabisan, near Kobe, April, 1903, *Abbé Faurie* (Y., distributed as *M. diptera* in Hép du Japon *1268*); Jigokudani, May, 1903, *S. Okamura* (C. C. H.); Kochi, May, 1904, *S. Okamura* (C. C. H.); Kanagawa, Sagami, no date, *M. Maeda 41* (Y.); Osaka, May, 1905, *S. Okamura* (C. C. H.); Ikku, May, 1908, *S. Okamura* (C. C. H.).

JAVA: Mt. Pangerango, April, 1894, *V. Schiffner* (Y., distributed as *M. nitida* in Iter Ind. *59*).

Within recent years *M. paleacea* has been recorded from the Caucasus, from Dalmatia, Spain and Portugal, and from Morocco. Although the writer has seen no specimens from any of these countries, there can be little doubt regarding the correctness of the determinations. Some of the records for *M. nitida,* however, are open to suspicion. This species has been reported from the Philippines, Tahiti, Samoa and New Zealand, as well as from the Fiji and Hawaiian Islands. Specimens from the first four of these localities, which have been determined as *M. nitida,* have been examined and are, in the writer's opinion, referable to other species. No specimens from either the Fiji or the Hawaiian Islands have been available for study.

Although *M. paleacea* is here reported from a number of North American localities it is remarkable that there are no earlier records for the species from America. In fact the only trustworthy records for *M. tholophora,* here considered a synonym of *M. paleacea,* are the following:

OAXACA: near Oaxaca, *Sommerschu* (the type-locality); Chinantla, *F. Liebmann* (listed by Gottsche in Mex. Leverm. 1863).

It has already been noted that *M. paleacea* was distinguished by the Florentine botanist Micheli as long ago as 1729. His figure brings out clearly the general habit of the plant and many of the features of the cupules and female receptacles. The rays of the latter are shown to be flat at their extremities, and the center of the disc is marked by a distinct rounded elevation. In the only receptacles where the rays can be counted ten or eleven are represented, but one receptacle in profile shows only four rays, indicating that sometimes at least fewer than ten rays were present in the material figured. It is now admitted that the

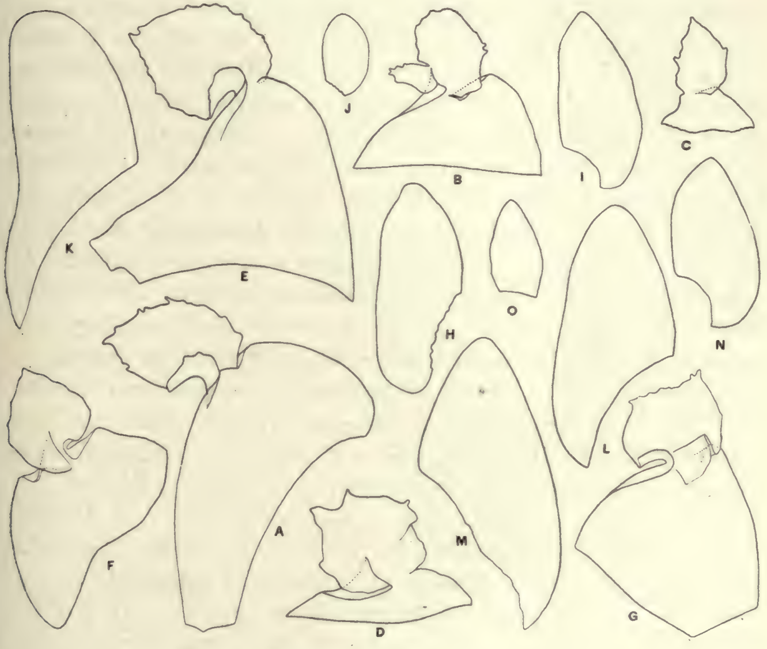

FIG. 6. MARCHANTIA PALEACEA Bertol.

Ventral scales, x 27. A-G represent median scales (with appendages); H-O, laminar scales (without appendages). A-D, H-J. Italy, *F. A. Arteria,* in V. Schiffner's Hep. Europ. Exsic. 13. E, K. Vera Cruz, *Barnes & Land 668.* F, L. Cuba, *C. Wright,* in Hep. Cubenses, as *M. domingensis.* G, M-O. Java, *V. Schiffner,* in Iter Ind. *59,* as *M. nitida.*

normal number of rays is nine. Micheli, in his description, emphasizes the glaucous color of the thallus. The species is still abundant in the vicinity of Florence, where it was originally collected, and specimens from this region are among those cited above.

Bertolini's description is drawn from female plants, and he distinctly states that both male receptacles and cupules were unknown to him. His material came from the vicinity of Chiavari in Liguria. He adds very little to Micheli's account, but gives the number of rays definitely as ten and notes that their extremities are obtuse or almost truncate. Apparently his species was not very widely known at first because neither Raddi nor Lehmann and Lindenberg make any allusion to it. Raddi's *M. papillata β italica* was based on Micheli's description and figure and on specimens collected at Micheli's original locality. *M. nepalensis* and *M. nitida* were based on material collected by Wallich in Nepal and *M. squamosa* on two specimens, one collected by Wallich in Nepal and the other by Raddi in Brazil.

In 1835 Taylor[25] accepted *M. paleacea* as a species and referred to it not only the Italian specimens originally cited but also specimens from Nepal collected by Wallich. Although there seem to be no specimens in the Taylor herbarium labeled *"M. paleacea"*, there are two with a manuscript name of Taylor's from the Wallich collection. In one case *M. nitida* is given as a synonym and *M. squamosa* as a doubtful synonym, so that these specimens probably represent the *M. paleacea* of Taylor's paper. Unfortunately his figures and description do not correspond in all respects with authentic specimens of the species in question and have therefore given rise to considerable confusion. The most marked discrepancy is in his account of the female receptacles, where the number of involucres is given as four to six, instead of eight (corresponding with nine rays), but an error of this sort might easily be made if poor material was examined. Taylor's specimens are, indeed, imperfectly developed, but they show the thallus characters of *M. paleacea* very clearly, and his determination may therefore be considered correct.

In proposing *M. tholophora* as a species Bischoff makes no mention of *M. paleacea* or of the various species based on

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[25] Trans. Linn. Soc. 17: 378. *pl. 12, f. 3.* 1835.

Wallich's specimens, so that the works of Bertolini and of Lehmann and Lindenberg may have been unknown to him. His description was drawn from Sommerschu's material, collected

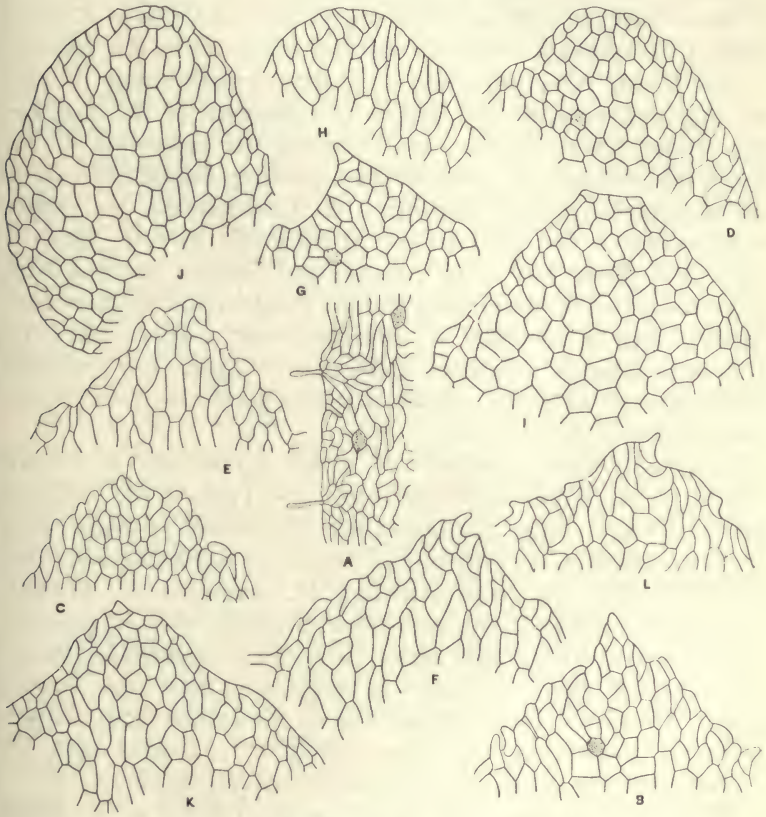

FIG. 7. MARCHANTIA PALEACEA Bertol.

Portions of ventral scales. A. Margin of basal portion of median scale, x 100. B-L. Appendages of median scales, x 100. A-C. Italy, *F. A. Artaria,* in V. Schiffner's Hep. Europ. Exsic. *13.* D. Azores, *F. D. Godman.* E, F. Vera Cruz, *Barnes & Land 668.* G, H. Cuba, *C. Wright,* in Hep. Cubenses, as *M. domingensis.* I-K. Nepal, *N. Wallich;* I, type of *M. nepalensis;* J, type of *M. nitida;* K, type of *M. squamosa;* L, Java, *V. Schiffner,* in Iter Ind. *59,* as *M. nitida.*

near Oaxaca, Mexico, and is unusually detailed. The species is recognized as valid by subsequent writers, the authors of the Synopsis Hepaticarum placing it next to *M. nitida* and Stephani following their example. The original material has not been available for study. Bischoff's description, however, and the figure which he[26] afterwards published show almost beyond a doubt that the species represents a synonym of *M. paleacea*. This conclusion seems further warranted by the fact that the true *M. paleacea* is now known from several Mexican localities.

Nees von Esenbeck, in describing *M. paleacea,* places it in the section *Chlamidium* and calls especial attention to the features of the female receptacle. He gives the normal number of rays as nine and mentions the median protuberance of the disc and the dilated apices of the rays. Among the synonyms of the species he includes *M. nitida* without question, basing his opinion on specimens received directly from Lindenberg. He quotes a statement of the latter author to the effect that *M. nitida* is very close to the Italian *M. paleacea* and perhaps identical with it, accompanied by the remark that *M. paleacea* had not been seen by him when he published *M. nitida* as a new species. Nees von Esenbeck hesitates somewhat in the case of Taylor's *M. paleacea* but inclines toward the opinion that this plant also must be the same as Bertolini's species.

In spite of these statements *M. nitida* is reinstated as a valid species in the Synopsis Hepaticarum and Taylor's *M. paleacea,* so far as the Nepal specimens are concerned, is given as a synonym under it, the range of *M. paleacea* being again restricted to Italy. Both *M. nepalensis* and *M. squamosa* are likewise accepted as valid and these two species, together with *M. paleacea* and *M. nitida,* are included under the section *Chlamidium*. Many years later, in 1899, Stephani,[27] in recognizing these four species, placed *M. nitida* and *M. nepalensis* in his section with unsymmetrical receptacles, while he placed *M. paleacea* and *M. squamosa* in the section with symmetrical receptacles.

In 1898 doubt was again thrown on the validity of *M. nitida* by Schiffner,[28] who stated that it was probably synonymous with *M. paleacea*. Two years later he reaffirmed this idea and added that *M. calcarata* Steph., according to a specimen in his herbarium, was surely identical with *M. nitida*.[29] In the following year he maintained still more definitely that *M. paleacea* and *M. nitida* were identical and stated further that in his opinion *M. nepalensis* also would have to be considered a synonym.[30] He criticised Stephani for placing *M. paleacea* in one section of the genus, while he placed *M. nepalensis* and *M. nitida* in another, thus implying that their relationship to the Italian species was at best remote.

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[26] Handb. Bot. Term. und Systemk. **2:** *pl. 55, f. 2727*. 1842.

[27] Bull. Herb. Bossier 7: 402, 522. 1899.

[28] Conspect. Hepat. Archip. Indici 50. Batavia, 1898.

[29] Fl. de Buitenzorg 4: 31. 1900. A specimen in the writer's herbarium, collected by the Abbé Faurie at Tokyo, Japan, and distributed (Hép. du Japon *2360*) under the name *M. calcarata,* represents *M. polymorpha*. Stephani himself now regards the true *M. calcarata* as a synonym of *M. diptera* Mont., a species which evidently requires further study.

The writer would agree with Schiffner in his reductions. Type specimens of *M. papillata β italica,* of *M. nepalensis,* and of *M. nitida* have all been available for study. The first and third are in good condition and show close agreement with each other and with the abundant material of *M. paleacea* from other localities. The type specimen of *M. nepalensis* bears very immature female receptacles, but the thallus characters are those of *M. paleacea* and there seems to be no reason for attempting to maintain the species as valid. Two other species quoted above among the synonyms of *M. paleacea* remain to be considered. The first of these is *M. squamosa.* Wallich's specimens of this species are clearly the same as *M. paleacea,* and since these specimens are the ones first quoted by Lehmann and Lindenberg, they might logically be considered the type. It is probable, however, that Raddi originally gave the name *M. squamosa* to his own Brazilian specimens, and this is apparently the view held by Stephani who quotes only the specimens from Brazil. Raddi's specimens have not been seen by the writer. If they should prove distinct from *M. paleacea* it might still be possible to maintain *M. squamosa* as valid. It is unfortunate that Raddi published nothing on his species himself. The second species to be considered is *M. planipora,* which the writer knows from a portion of the type material and from specimens sent by Professor Miyake. These specimens agree with *M. paleacea,* and the descriptions given by Stephani bring out no essential differences.

There is usually little difficulty in distinguishing *M. paleacea* even in the absence of receptacles. At the present time it is the only known North American species in which the epidermal pores constantly conform to the cruciate type. In this respect it agrees with *M. Berteroana* of the Southern Hemisphere, a much larger plant with very different scale-appendages and terete rays on the female receptacle. Aside from the cruciate pores *M. paleacea*

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[30] Lotos **49**: 92. 1901.

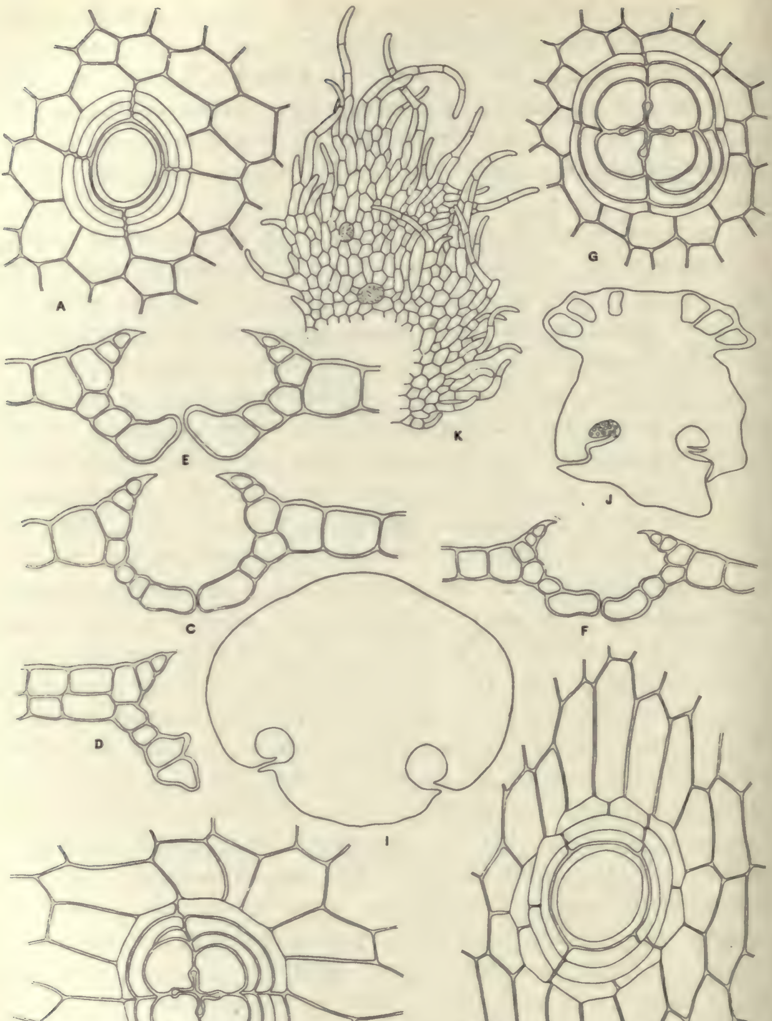

Fig. 8. MARCHANTIA PALEACEA Bertol.

Anatomical details. A, B. Epidermal pores of thallus, surface view, x 225. C-F. Pores in cross-section; C, D, F, x 225; E, x 300. G, H. Pores, inner view, x 225. I. Stalk of male receptacle, cross-section, x 40. J. Stalk of female receptacle, cross-section, x 40. K. Part of involucre, x 50. A, C, D, G, J, K. Italy, *F. A. Artaria,* in V. Schiffner's Hep. Europ. Exsic. *13*. B, E, H. Vera Cruz, *Barnes & Land 668*. F. Java, *V. Schiffner,* in Iter Ind. *59,* as *M. nitida.* I. Puebla, *Frère Arsène.*

is distinguished from *M. polymorpha* by its somewhat smaller size, by its total lack of epidermal papillae, by having the pores bounded by six or seven rows of cells, by the presence of sclerotic cells, by the flattened rays of the female receptacles, by the lack of marginal scales and by marked differences in the appendages of the median scales. In *M. polymorpha* epidermal papillae are always present on cupules and female receptacles, the pores are surrounded by only four or five rows of cells, there are no sclerotic cells, the rays of the female receptacle are terete, and marginal scales are always present.

The features of the appendages in *M. paleacea* deserve particular attention (FIG. 7, B-L). When a long series is examined, it will be seen that they exhibit marked differences in their apices and margins, although they are almost constantly longer than broad and maintain an oblong or ovate form. The apex is sometimes rounded, sometimes truncate, and sometimes apiculate or even acute, while the margin may be entire throughout, variously toothed, or even provided with a basal lobe. A tooth, on its part, may be the slightest and vaguest projection of a marginal cell, it may be a distinctly projecting cell, or it may consist of a cell borne on a stalk-cell; in some of the broader teeth two adjoining cells may even be involved. It must be admitted, however, that large and complicated teeth are the exception. In commenting on the type specimen of *M. nitida* Schiffner states that the appendages are broadly ovate, less pointed at the apex and scarcely toothed, those of his Javan material being broadly cordate, abruptly pointed and with irregular and distant marginal teeth. These differences, which he considers of little importance, are shown by FIG. 7, J, L, and at first sight are somewhat striking. Since, however, equally extreme conditions are sometimes found on a single specimen, as shown by FIG. 7, G, H, it is evident that Schiffner did not underrate their value. The appendages also vary in the number of cells with oil-bodies which they show. In some cases no such cells are present; in one case as many as ten were counted; in the majority of cases there are from one to three. The gradual decrease in size between the median cells and the marginal cells is usually evident, although the actual measurements are not very different, and a distinct margin is never apparent as in *M. Berteroana*. It may be noted that Stephani assigns smaller marginal cells to *M. nepalensis, M. nitida,* and *M. tholophora,* while he states that the cells of *M. paleacea* are subequal in size, a specific difference which is not supported by actual comparisons. When contrasted with the appendages of *M. polymorpha,* those of *M. paleacea* are seen to be narrower, usually less toothed, and composed of larger cells, which show a less marked decrease in size between the median and marginal regions.

The male receptacles of *M. paleacea* seem to be infrequent. In the few cases seen the receptacles have been remarkably like those of *M. polymorpha,* although borne on shorter stalks. In other words the disc has been shortly eight-lobed with rounded rays and narrow sinuses. According to Schiffner the rays as they grow older become longer and give the disc a palmate appearance. If this is true the male receptacles exhibit a considerable range of variation. The cupules of *M. paleacea,* with their dentate, sharp-pointed lobes, likewise agree with those of *M. polymorpha* and its allies, except that the outer surface is free from epidermal papillae.

When well developed the female receptacle of *M. paleacea* consists of a disc with nine horizontal flat rays borne on an elongated stalk. In many cases the rays are about twenty degrees apart and present the appearance of being symmetrically disposed. Even here, however, the single plane of symmetry is marked by the sinus between the two basal rays, which is much deeper than the others. When the basal rays are separated by a sinus more than twenty degrees wide the plane of symmetry is more apparent and the disc does not show a radial appearance. Since the width of the sinus between the basal rays varies markedly it should not be made the basis for specific separations, although this has evidently been done in the past. The extremities of the rays are variously dilated and are truncate or even emarginate at the apex. In the center of the disc the hemispherical or bluntly conical protuberance is usually distinct, and the same thing is true of the nine rounded ridges extending from the protuberance to the beginnings of the rays. When the receptacle is young or, in some cases, when fertilization has not taken place, the rays do not spread horizontally but extend downward, and usually, under these circumstances, the median protuberance and the radiating ridges are only slightly developed. In fact they are not always distinct even when the rays have assumed a horizontal position. Although the normal number of rays in *M. paleacea* is nine, just as in *M. polymorpha,* deviations from this number sometimes occur, a reduced number being associated with poor development.

According to Prescher scattered slime cells of small size are present in the walls of the cupules of *M. paleacea* but are lacking altogether in the thallus and in the female receptacles. Although the thallus sometimes agrees with his account it does not always do so. Cases have been observed in which slime cells formed a rather conspicuous feature of the ventral tissue of the wings, an occasional cell of this character being present even in the thickened median region. In other cases, the slime cells were less abundant. In the male receptacles, which Prescher did not examine, slime cells are fairly numerous. It is evident from these observations that the presence or absence of slime cells can not be utilized in distinguishing *M. paleacea.*

5. **Marchantia breviloba** sp. nov.

Thallus pale green, more or less glaucous, sometimes a little pigmented with purple, especially near the margin and on the lower surface, mostly 0.5-0.8 cm. wide and 2-5 cm. long, repeatedly dichotomous, the successive forks usually 1-2 cm. apart, texture firm but not leathery, margin entire; epidermis composed of cells with somewhat thickened walls, sometimes in two layers mostly 45-90μ long (averaging about 65μ) and 20-40μ wide (averaging about 28μ), papillae absent; pores (with their surrounding cells) mostly 125-150μ long and 100-120μ wide, surrounded usually by six (or seven) rows of cells (three in each series or sometimes four in the outer series), innermost row of upper series usually composed of four cells, second row of four to eight cells and third row of eight or more cells, each row of lower series usually composed of four cells, inner opening usually four-sided (sometimes three-, five-, or six-sided), the sides being concave and forming acute angles with one another, bounding cells of pore more or less roughened with a resinous deposit; air-chambers usually high, more or less elongated, their outlines very indistinct when viewed through the epidermis, present everywhere, rows of photosynthetic cells often four or five cells long; compact ventral tissue mostly twenty or twenty-five cells thick in the median portion, the walls sometimes pigmented, more or less thickened and showing distinct pits, sclerotic cells distinct, scattered, about forty in a cross-section, largely confined to median region, sometimes as much as 0.7 mm. in length, slime cells about 0.1 mm. in diameter, usually conspicuous (often three or four in a cross-section of thallus), scattered but more abundant toward the margin, sometimes present in the walls between air-chambers; ventral scales in two distinct rows, the laminar scales alternating with the median and only a little nearer the margin (a large portion of the ventral surface being free from scales); appendages of median scales ovate to orbicular, mostly 0.5-0.65 mm. long and 0.45-0.55 mm. wide, narrowed toward the rounded, obtuse, or apiculate apex, margin sinuate, sparingly and irregularly crenulate or denticulate from projecting cells, cells showing a gradual decrease in size toward the margin, median cells usually distinctly longer than broad, mostly 60-120μ long and 28-40μ wide, marginal cells mostly 30-50μ long and 18-25μ wide, irregular, the long axis usually forming an angle with the margin, rarely parallel with it, cells containing oil-bodies lacking: male receptacle borne on a stalk 1.5-2 cm. high, with two to four rhizoid-furrows and a single narrow dorsal band of air-chambers, the disc mostly 1-1.5 cm. broad, deeply six- (or seven-) lobed, the lobes or rays palmately disposed (the basal sinus being almost a straight line), mostly 2-5 mm. long and 1.5 mm. wide, rounded and with a thin wavy margin, ventral scales imbricated, mostly in two rows: female receptacle borne on a stalk 6-8 cm. long, with four rhizoid-furrows (except close to the base) and a single broad dorsal band of air-chambers, the disc mostly 0.6-0.8 cm. broad, usually eleven-lobed, sometimes seven- to nine-lobed, the lobes or rays short, 1 mm. long or less, flat, scarcely or not at all dilated at the truncate apex, basal sinus considerably broader than the others, upper surface of disc plane or with low ridges corresponding with the lobes; involucre ciliate, not lobed; spores yellowish brown, about 34μ in diameter, with a hyaline margin about 4μ wide, outer face bearing a few low lamellae, sometimes forming a very indistinct reticulum; elaters about 8μ wide, bispiral: cupules shortly and irregularly ciliate-dentate, the teeth sometimes adjoining and sometimes separated by sinuses of varying width, mostly two or three cells long and one or two cells wide at the base, epidermal papillae lacking. (FIG. 9.)

The following specimens of this species, which seems to be very local, have been examined:

JAMAICA: without definite localities or dates, *Wilds* (N. Y., four specimens); Hardware Gap and vicinity, April, 1903, *W. R. Maxon 1115* (U. S., Y.); July, 1903, *A. W. Evans 175, 203* (Y.); Chestervale, July, 1903, *A. W. Evans 211* (Y.); vicinity of Cinchona, March, 1905, *C. E. Cummings 28* (N. Y., Y.); St. Catherine's Peak and vicinity, August, 1906, *A. W. Evans 441* (Y.). The specimens collected by Wilds include both

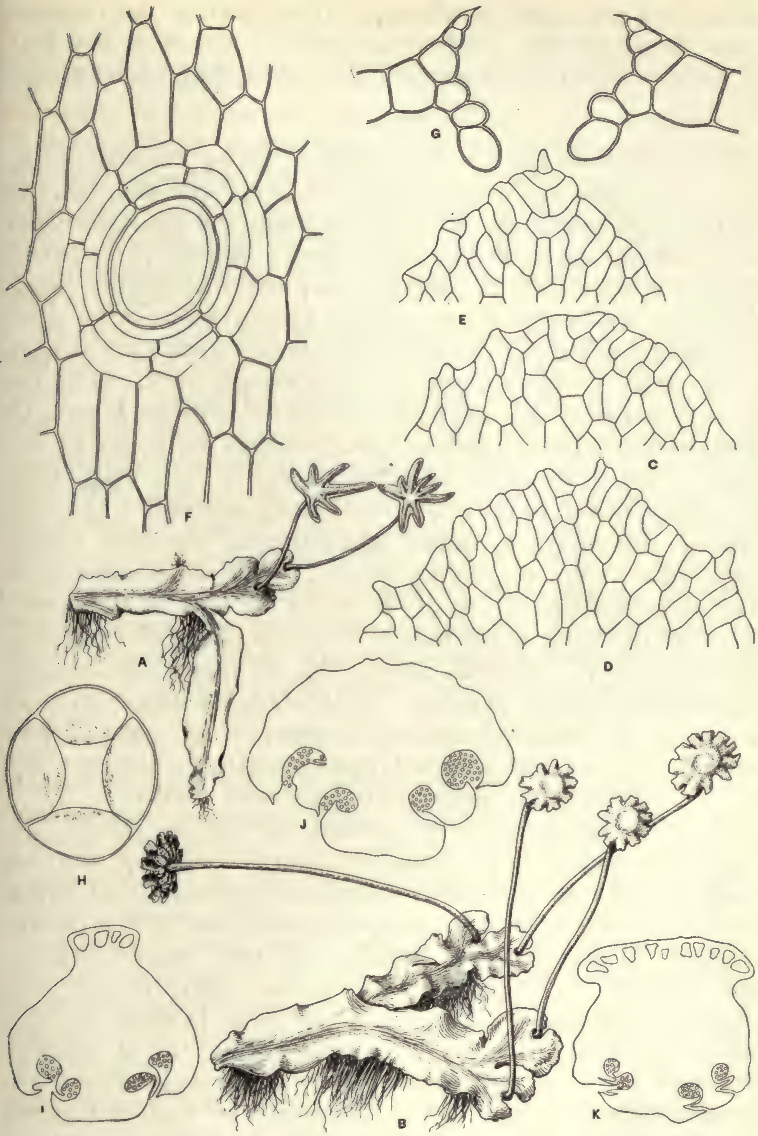

FIG. 9. MARCHANTIA BREVILOBA Evans

Plants, natural size, and various anatomical details. A. Male plant, x 1. B. Female plant, x 1. C-E. Appendages of ventral scales, apical portions, x 100. F. Epidermal pore of thallus, surface view, x 225. G. Pore in cross-section, x 225. H. Inner opening of pore, x 225. I, J. Stalk of male receptacle, cross-sections, x 40; I was cut near base; J, near apex. K. Stalk of female receptacle, cross-section, cut near base. A. Jamaica, *W. R. Maxon 1115*. B-D, F-K. Jamaica, *A. W. Evans 175*, type. E. Jamaica, *A. W. Evans, 203*.

female and gemmiparous material. Two, bearing the numbers 5 and 6, are labeled *"Marchantia conica"*; the other two bear no name. No. 175, collected by the writer, may be designated the type.

The thallus of *M. breviloba* bears a strong resemblance to that of *M. paleacea,* being of about the same size and similarly subject to pigmentation. The ventral scales and the appendages of the median scales in these two species likewise have certain features in common. The arrangement of the scales, for example, is very similar and the appendages agree in form, in the gradual decrease in the size of the cells in passing toward the margin, and in some of the peculiarities of the margin itself. Even the pores look a good deal alike when examined through a lens. A detailed examination, however, quickly brings out points of difference. In *M. breviloba* the pores are not of the cruciate type, the inner opening (so far as observed) being surrounded by evenly bulging cells and thus usually exhibiting a four-sided outline with concave sides and narrow angles; in *M. paleacea* the pores are distinctly cruciate. In *M. breviloba* the cells of the appendages are markedly larger than in *M. paleacea* and oil-containing cells seem to be constantly absent; in *M. paleacea* oil-containing cells can often be detected. In *M. breviloba* slime cells seem always to be numerous and conspicuous; in *M. paleacea* they are less frequent and may be absent altogether: this last difference, unfortunately, is one to be used with caution.

The differential characters yielded by the receptacles and cupules, in separating *M. breviloba* from *M. paleacea,* are even more marked than those derived from the thallus. In *M. breviloba* the male receptacle is borne on a long stalk with a distinct band of air-chambers and usually with four rhizoid-furrows; and the disc is unsymmetrically divided into six or seven elongated lobes, the basal sinus being much broader than the others and often approximating a straight line. In *M. paleacea* the male receptacle is borne on a very short stalk without air-chambers and with only two rhizoid-furrows; while the disc is very shortly and apparently radially divided into eight (or more) often indistinct lobes, the basal sinus being of about the same width as the others.

In *M. breviloba* the stalk of the female receptacle shows four rhizoid-furrows, and the disc is very shortly lobed, the lobes being usually more than nine and scarcely if at all dilated at the apex. In *M. paleacea* the stalk of the female receptacle shows only two rhizoid-furrows, and the disc is more deeply divided, the lobes being usually nine (or fewer) and more or less distinctly dilated at the apex; the upper surface of the disc, moreover, shows a median protuberance and nine ridges corresponding with the rays, these structures being very indistinct in *M. breviloba* or absent altogether. In *M. breviloba* the cupule is simply short-ciliate; in *M. paleacea* it shows a series of ciliate or dentate lobes.

There is no difficulty in separating *M. breviloba* from *M. polymorpha.* The new species is smaller, it lacks marginal ventral scales, the appendages of the median scales have larger cells and usually fewer marginal teeth, the epidermal cells are more complex being surrounded by more rows of cells, there are no epidermal papillae, the stalk of the male receptacle has air-chambers and usually more rhizoid-furrows, the disc is more deeply and more unsymmetrically lobed, the stalk of the female receptacle has more rhizoid-furrows, the disc is less deeply lobed, and the lobes are flattened instead of being terete. The difference in the cupules, already noted in connection with *M. paleacea,* would apply equally well in separating the species from *M. polymorpha.*

6. MARCHANTIA DOMINGENSIS Lehm. & Lindenb.

Marchantia domingensis Lehm. & Lindenb.; Lehmann, Pug. Plant. **6**: 22. 1834.
Marchantia inflexa Nees & Mont.; Montagne, Ann. Sci. Nat. Bot. II. **9**: 43. 1838.
Marchantia disjuncta Sulliv. Am. Jour. Sci. II. **1**: 74. 1846.
Marchantia linearis G. L. & N. Syn. Hep. 529. 1847 (in part). Not Lehm. & Lindenb.
Marchantia martinicensis Spreng.; G. L. N. *l. c.* 531. 1847 (as synonym).
Marchantia Elliottii Steph. Bull. Herb. Boissier **7**: 400. 1899.
Marchantia caracensis Steph. *l. c.* 526. 1899.

Thallus pale to dark green, not glaucous, slightly or not at all pigmented with purple, usually 4-6 mm. wide and 2-3 cm. long, dichotomous, the successive forks usually 1-1.5 cm. apart, texture delicate, margin entire; epidermis composed of cells with slightly thickened walls, sometimes in two layers, mostly 30-60μ long (averaging about 45μ) and 15-30μ wide (averaging about 23μ), papillae absent; pores (with their surrounding cells) mostly 90-130μ long and 70-80μ wide, surrounded usually by six (or seven) rows of cells (three or four in the upper and three in the lower series), the two lower rows of the upper series usually composed of eight (six to ten) cells apiece (more rarely of only three to five cells), the other rows of four (three to five) cells apiece, inner opening usually four-sided, more rarely three- or five-sided, with the sides straight or nearly so, the bounding cells more or less obscured by a resinous deposit; air-chambers of medium height, isodiametric or somewhat elongated, their boundaries sometimes distinct and sometimes vague when viewed through the epidermis, present everywhere, rows of photosynthetic cells often four or five cells long but sometimes shorter; compact ventral tissue about twenty cells thick in the median portion, the walls sometimes pigmented, more or less thickened and showing distinct pits, sclerotic cells usually distinct, scattered, mostly five to thirty in a cross-section, more abundant in the median portion but sometimes present in the wings, in the latter case often distinctly visible without sectioning, slime-cells lacking; ventral scales in two distinct rows, the laminar scales alternating with the median scales and not much nearer the margin; appendages of the median scales broadly lanceolate to ovate, when well developed mostly 0.35-0.6 mm. long and 0.27-0.45 mm. wide but sometimes considerably smaller, apex apiculate, acute, or cuspidate, margin more or less densely denticulate or dentate, the teeth usually one or two cells long, cells showing a gradual and slight decrease in size toward the margin, median cells usually longer than broad, mostly 40-80μ long and 20-40μ wide, marginal cells mostly 20-40μ long and 15-20μ wide, irregular but the long axis usually at right angles or nearly so to the margin, cells containing oil-bodies apparently always lacking: male receptacle borne on a stalk 5 mm. long or less, with two to four rhizoid-furrows and a single broad dorsal band of air-chambers, the disc variable in size but mostly 6-8 mm. broad, deeply lobed, the lobes or rays usually four to six but sometimes two, three, seven or eight, palmately disposed, the basal sinus a very broad angle or a straight line, mostly 3-6 mm. long and 2-3 mm. wide, rounded, with a thin wavy margin extending across the basal sinus, ventral scales imbricated, in two or more rows; female receptacle borne on a stalk 1.5-2 cm. high, with two to four rhizoid-furrows and a single broad dorsal band of air-chambers, the disc mostly 5-7 mm. wide, the lobes or rays spreading at maturity, extending about half way from the margin to the center, normally seven but often only five or six, more rarely eight to eleven, slightly or not at all dilated at the truncate, irregularly crenate or slightly emarginate apex, upper surface of disc and rays usually plane but sometimes more or less convex, basal sinus broader than the others and sometimes forming a very obtuse angle; involucre very delicate, the margin minutely and often irregularly crenulate to short-ciliate, the teeth usually varying from one to three cells in length; spores brownish yellow, about 28μ in diameter, the outer face bearing a series of low irregular ridges not forming a network; elaters about 6μ wide, bispiral: cupules closely short-ciliate, the cilia mostly one to four cells long, outer surface without papillae. (FIGS. 10-12.)

A widely distributed species in the southern United States, the West Indies, Mexico, Central America, and Venezuela. The following specimens have been examined:

TENNESSEE: Etowah, June, 1909, *F. McCormick* (C. C. H., Y., listed as *M. disjuncta* by the writer in Bryologist **13**: 33. 1910).

GEORGIA: west bank of Ocmulgee River, Hawkinsville, June, 1902, *R. M. Harper 1382a* (N. Y., U. S.); Samochechobee Creek, near Killen, Clay County, October, 1902, *R. M. Harper 1791b* (N. Y., U. S.); Flint River swamp, below Albany, Dougherty County, August, 1903, *R. M. Harper 1951e* (N. Y., U. S.).

FLORIDA: Devil's Millhopper, Alachua County, February, 1909, *R. M. Harper 14* (N. Y.); April, 1915, *N. L. T. Nelson 45, 46, 47, 51* (Y.).

ALABAMA: banks of the Alabama River near Claiborne, *W. S. Sullivant* (H., type locality of *M. disjuncta,* specimens distributed in Musc. Alleg. *286* and Hep. Bor.-Amer. *128*); Auburn, May, 1896, *L. M. Underwood* (N. Y., Y., distributed, as *M. disjuncta,* in Hep. Amer. *182*); June, 1897, *Earle & Baker 52* (N. Y.).

TEXAS: Fort Worth, 1887, *G. S. Thompson 10* (N. Y., U. S., listed as *M. disjuncta* by Underwood in Bot. Gaz. **20**: 69. 1895); Hallettsville, May, 1892, *G. C. Nealley 59* (C. C. H., U. S.); Austin, March, 1909, *F. D. Heald* (Y.).

ARKANSAS: Fort Harvey, no date, *F. L. Harvey 2* (N. Y., listed as *M. disjuncta* by Underwood, *l. c.*).

MEXICO: without definite locality or date, *C. H. Schultz 1229* (B., listed as *M. papillata,* by Stephani in Bull. Herb. Boissier **7**: 397. 1899).

HIDALGO: Tula, *C. G. Pringle 10675* (Y., distributed in Pl. Mex. under a manuscript name of Stephani).

PUEBLA: banks along Avenida Hidalgo and path to barranca, Tezuitlan, 1908, *Barnes & Land 553* (Y.).

TAMAULIPAS: near Victoria, June, 1907, *E. Palmer 446* (N. Y., Y.).

VERA CRUZ: Orizaba and vicinity, 1855, *F. Müller 2373* (N. Y., listed as *M. disjuncta* by Underwood, *l. c.*); 1857, *C. Mohr* (N. Y., Y.); March, 1890, *W. Stone 114, 115* (N. Y., listed by Underwood, *l. c.*); 1892, *J. G. Smith* (N. Y., Y.); Cordova, 1885, *W. G. Farlow 18* (N. Y., listed as *M. tholophora* by Underwood, *l. c.* 70).

GUATEMALA: Black River, *S. Watson 295b* (H., N. Y., listed as *M. linearis* by Underwood, *l. c.* 69); near the Finca Sepacuite, Alta Verapaz, March and April, 1902, *Cook & Griggs 82, 255, 403* (U. S., Y.).

BAHAMAS: Fort Charlotte, New Providence, April, 1905, *L. J. K. Brace 3916* (N. Y., Y., listed as *M. chenopoda* by the writer in Bull. Torrey Club **38**: 206. 1911); New Providence, October, 1904, *L. J. K. Brace 873* (N. Y.).

CUBA: without definite localities or dates, *C. Wright* (distributed as *M. disjuncta* and *M. linearis* in Hep. Cubenses); San Andre, April 14, 1865, *C. Wright* (H., Y.); valley of the San Juan River, near Matanzas, March, 1903, *Britton, Britton & Shafer 326* (N. Y., Y.); Guines, Havana, March, 1905, *M. T. Cook* (N. Y., Y.); Almendares River, near Puentas Grandes, Havana, April, 1908, *Brother Leon 723* (N. Y., Y.); falls of the Habanilla and near Siguanea, Trinidad Mountains, Santa Clara, March, 1910, *E. G. Britton 4855, 5076* (N. Y., Y.); vicinity of Guane, Pinar del Rio, March, 1911, *Britton, Britton & Cowell 9770* (N. Y., Y.); vicinity of Pinar del Rio, March, 1911, *E. G. Britton 10017* (N. Y., Y.); Finca Guerrero, Rio Yayabo, St. Spiritus, Santa Clara, December, 1911, *Brother Clement 44* (N. Y., Y.); Banaos Hills, Santa Clara, August, 1913, *Brother Leon 4036* (N. Y., Y.); Ensenada de Mora, Oriente, March, 1912, *Britton, Cowell & Shafer 13005* (N. Y., Y.).

SANTO DOMINGO: Azui, province of Seibo, November, 1909, *N. Taylor 281* (N. Y., Y.).

JAMAICA: without definite locality or date, *N. Wilson 595, 611* (N. Y., listed as *M. disjuncta* by Underwood, *l. c.*); Hartford and adjoining properties, near Priestman's River, June, 1904, *W. R. Maxon 2535* (U. S., Y.); road from Holly Mount to Resource, February, 1905, *W. Harris 8876* (N. Y., Y.); vicinity of Mandeville, September, 1907, *E. G. Britton 429* (N. Y., Y.); February, 1910, *S. Brown 280, 282, 283* (N. Y., Y.); Kempsport and Roaring River Falls, March, 1908, *E. G. Britton 668, 708* (N. Y., Y.); Porus to Clarendon Park, September, 1908, *N. L. Britton 3785* (N. Y., Y.); Cokely, near Castleton, and Hope Gardens, January, 1914, *W. Harris* (N. Y.).

PORTO RICO: Las Marias Road and vicinity of Mayaguez, March, 1906, *Britton & Marble 594, 613* (N. Y., Y.); Lares to San Sebastiano, April, 1913, *Britton & Marble 2797, 2803* (N. Y., Y.); Rio de Maricao, April, 1913, *E. G. Britton 2494* (N. Y., Y.); Ciales, August, 1913, *J. R. Johnston 940* (N. Y., Y.); between Arecibo and Utuado, July, 1901, *Underwood & Griggs 836* (U. S., Y.); March, 1914, *E. G. Britton 2074* (N. Y., Y.); Lares, June, 1901, *Underwood & Griggs 36* (U. S., Y.); June, 1914, *J. R. Johnston 2070* (N. Y., Y.); Monte Montoso, February, 1915, *Britton & Cowell 4177* (N. Y., Y.); La Juanita, near Las Marias, February, 1915, *E. G. Britton 3965* (N. Y., Y.); vicinity of Utuado, March, 1915, *E. G. Britton 5168, 5112* (N. Y., Y.).

ST. KITTS: Bethesda, *J. C. Breutel* (N. Y., listed as *M. linearis* in Syn. Hep. 529 and as *M. domingensis* by Stephani in Bull. Herb. Boissier 7: 399. 1899); without definite locality, 1853, *Walwyn* (N. Y.); Old Road and Lambert Estate, September and October, 1901, *Britton & Cowell 481, 626* (N. Y., U. S., Y.).

MONTSERRAT: mountain pass to Roches and Tar River, February, 1907, *J. A. Shafer 867, 871* (N. Y., Y.).

GUADELOUPE: Morne Rouge, Gombeyre (Basse-Terre) and Morne Papillon, 1897-1900, *Père Duss 250, 251, 312, 392* (N. Y., Basse-Terre specimens listed as *M. disjuncta* by Schiffner in Oesterr. Bot. Zeitschr. **57**: 51. 1907).

DOMINICA: without definite locality or date, *W. R. Elliott 1292* (B., type of *M. Elliottii*).

MARTINIQUE: without definite locality, date, or collector's name (M., received from Mérat, type of *M. inflexa*); without definite locality or date, *Sieber 378* (N. Y., probably type of *M. martinicensis*); St. Pierre and between Deux-Choux and Gros-Morne, 1899, 1900, *Père Duss 342, 393* (N. Y.); Morne Rouge, August, 1901, *Père Duss 578, 580, 581* (N. Y.); Deux-Choux, September, 1903, *Père Duss* (N. Y., determined as *M. caracensis* by Stephani).

St. Vincent: without definite localities or dates, *L. Guilding* (H., N. Y., specimens in the Taylor and Mitten herbaria, labeled "*March. linearis—chenopoda.*"):

Grenada: Annandale, St. George's, March, 1906, *W. E. Broadway* (N. Y.).

Trinidad: without definite locality, 1878-80, *A. Fendler* (N. Y., U. S., Y., distributed as *M. chenopoda*); Mareval Valley, 1913, *R. Thaxter* (H., Y.); La Lenia Valley, 1913, *R. Thaxter* (H., Y.).

Venezuela: Rio Cartude, Caracas, 1856, *Gollmer* (B., type of *M. caracensis*); Caracas, August, 1902, *A. F. Blakeslee* (H., Y.).

The following stations, cited in literature, should also be noted:

Santo Domingo: without definite locality, date or collector's name (type).

Guadeloupe: without definite locality or date, *L'Herminier 69* (listed, as *M. linearis,* by Bescherelle in Jour. de Bot. 7: 193. 1893).

Martinique: without definite localities or dates, *C. Bélanger 124* (listed, as *M. linearis,* by Bescherelle, *l. c.*); *K. von Martius; C. Bélanger 24* in part, *374; Hahn 774* (the last three listed, as *M. inflexa,* by Bescherelle, *l. c.*).

The type specimen of *M. domingensis* was collected in Santo Domingo, neither the date nor the collector's name being mentioned in the original publication. Unfortunately this specimen has not been available for study. In its absence the writer has been obliged to rely upon West Indian material determined as *M. linearis* and upon the type specimen of *M. inflexa.* These are referred to *M. domingensis* without question by Stephani and agree in all essential respects with the other specimens listed. The type specimens of *M. disjuncta, M. Elliottii* and *M. caracensis* have likewise been examined and show a similar agreement. The writer feels convinced, therefore, that the synonymy given above is correct.

The type specimen of *M. inflexa,* received from the Montagne herbarium, is very fragmentary but bears two female recep-

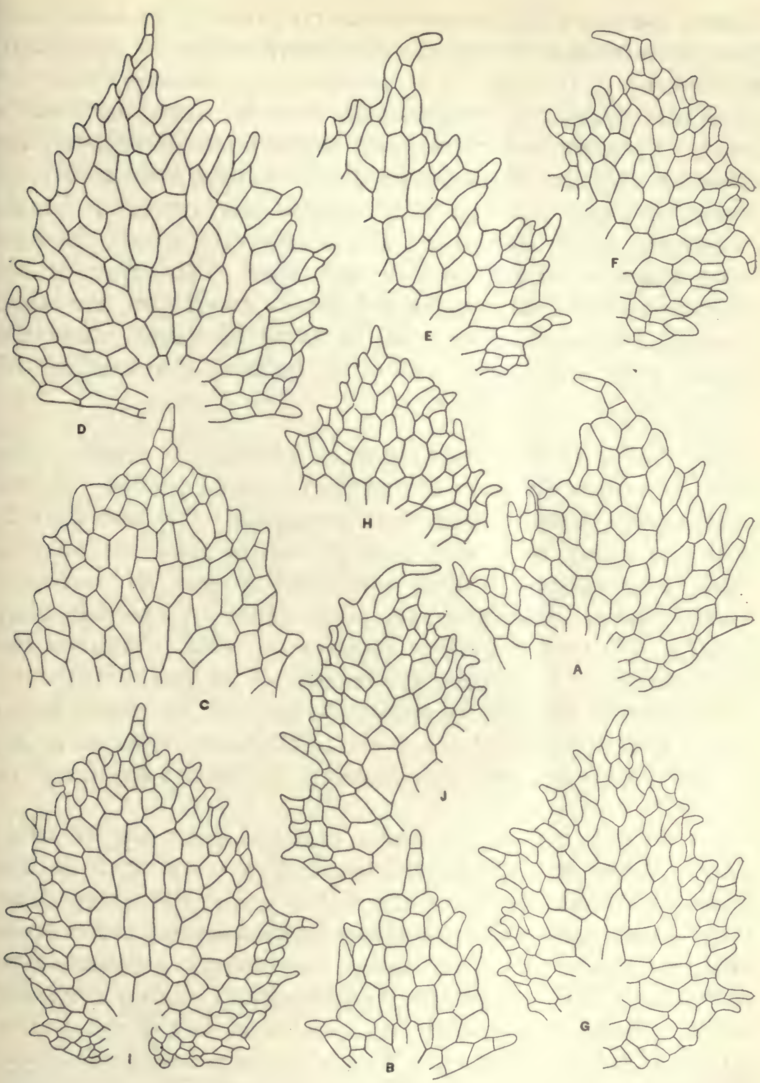

FIG. 10. MARCHANTIA DOMINGENSIS Lehm. & Lindenb.

Appendages of ventral scales, x 100. A, B. Alabama, *Earle & Baker 52*. C. Cuba, *C. Wright,* distributed in Hep. Cubenses, as *M. disjuncta.* D, E. Hope Gardens, Jamaica, *W. Harris.* F. St. Kitts, *J. C. Breutel,* specimen in the Mitten herbarium, labeled *M. linearis* and *M. chenopoda.* G. St. Kitts, *Britton & Cowell, 626.* H. Martinique, type of *M. inflexa.* I, J. Mareval Valley, Trinidad, *R. Thaxter.*

tacles: the first shows nine truncate rays clearly, the basal sinus being broader than the others; the second shows ten less clearly marked rays. The type of *M. disjuncta* agrees closely with the specimens distributed by Sullivant, by Austin, and by Underwood. They are well represented in the beautiful figures published by Sullivant,[31] and the female receptacles show a variable number of rays. The type of *M. Elliottii* bears numerous female receptacles, which show from five to nine rays apiece, the rays being plane or slightly convex and blunt. The type of *M. caracensis* bears both cupules and female receptacles, the latter showing five rays apiece. All of these specimens show the dentate scale appendages and other features characteristic of the species.

The thallus of *M. domingensis* is smaller and usually more delicate in texture than in any of the preceding species. In wet localities the photosynthetic layer is especially thin and the epidermis is rarely more than a single cell in thickness, so that plants growing under these conditions present an unusually fragile aspect. The epidermal pores, however, maintain their complex structure and form conspicuous whitish dots on the upper surface. Sometimes the boundaries of the air-chambers show distinctly through the epidermis, but they are usually indistinct. The structure of the pores is much the same as in *M. breviloba,* although the inner opening is bounded by straighter lines.

The sclerotic cells in the thallus exhibit a great deal of variability. When abundantly developed they occur both in the thickened median portion of the thallus and in the wings, those in the latter position showing distinctly as elongated brown spots when examined from underneath. The sclerotic cells appear to be separated from one another by parenchyma when a cross section of a thallus is examined. As a matter of fact, in the median portion of the thallus at least, they often form elongated strands running for a considerable distance, the acute ends of the cells slightly overlapping. There are many cases, however, where the sclerotic cells are very scantily developed. Sometimes there are none at all present in the wings although the median portion still retains them; sometimes even the median portion seems to lack them completely, although no specimens have yet been seen in which a careful examination failed to show traces of sclerotic cells in this region.

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[31] Mem. Am. Acad. II. 3: *pl. 3.* 1846.

The appendages of the ventral scales (Fig. 10) have better developed teeth than in any other North American species of *Marchantia,* although the South American *M. papillata* is a close rival in this respect. The teeth are very irregular, the simplest being single cells which project as rounded or bluntly pointed processes. Between these simple teeth and irregular lobes, several cells long and wide, are all possible gradations. The apical tooth tends to be longer than the others, although this tendency is not always apparent. The median cells of the appendages are often longer than broad and a decrease in the size of the cells

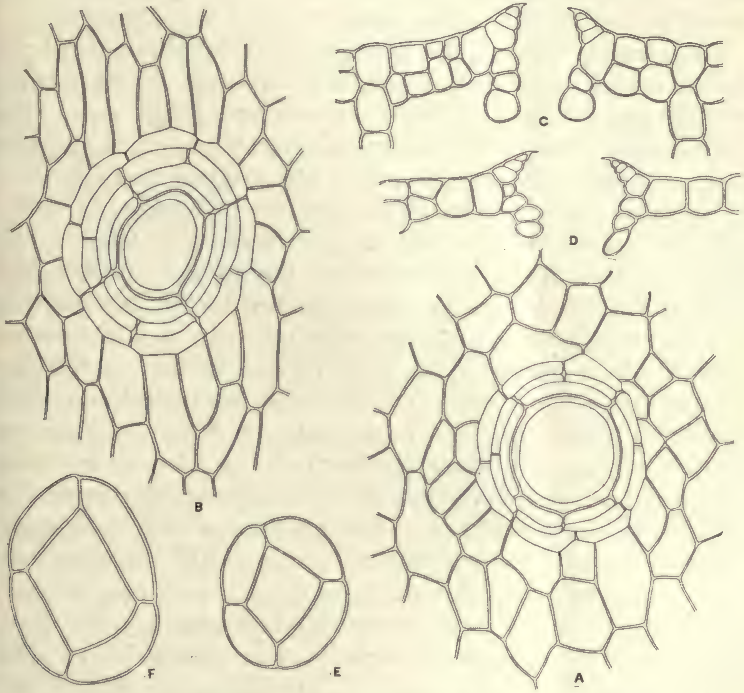

Fig. 11. Marchantia domingensis Lehm. & Lindenb.

Epidermal pores of thallus, x 225. A, B. In surface view. C, D. In cross-section. E, F. Inner openings. A, C, E. Texas, *F. D. Heald.* B, D, F. Cokely, near Castleton, Jamaica, *W. Harris.*

between the middle portion and the margin is distinctly evident. There is no definite border, however, as in *M. Berteroana*. Sometimes, in wet situations, the appendages remain very small, although even under these circumstances the marginal teeth form a conspicuous feature. The more sharply pointed apices, the larger and more irregular teeth, the larger marginal cells and the lack of cells containing oil-bodies will at once distinguish the appendages of *M. domingensis* from those of *M. polymorpha*.

According to the original description of *M. domingensis* the female receptacle is semicircular and ten-lobed to the middle, the lobes being dilated and emarginate-crenate at the apex. The Synopsis gives the number of lobes as seven to ten, while Stephani states that nine lobes are present. The original description of *M. inflexa* assigns nine to eleven lobes to the receptacle, while Sullivant gives seven to nine as the number of lobes in *M. disjuncta;* here again Stephani places the number of lobes definitely at nine, and gives the same number for *M. Elliottii*. In *M. caracensis,* however, he states that only five or six lobes are present. As a matter of fact the receptacles are exceedingly variable and it is not easy to decide what the typical or normal number of lobes really is. In the material from the mainland seven is perhaps the usual number but five lobes often occur and more than seven have been observed in several instances. In the West Indian material nine lobes are present more frequently, but seven or even only five lobes are not unusual. Sometimes the lobes seem to be subdivided, so that it is not always easy to count them except by means of the involucres which alternate with them. The lobes vary not only in number but in thickness. In some cases they are very thin and flat, in other cases thicker and convex. When the lobes are fleshy the center of the disc sometimes shows a low swelling, but it is usually plane, and the receptacle never shows the conspicuous median protuberance and radiating ridges which are so characteristic of *M. paleacea*.

The study of the involucre is beset with considerable difficulty on account of its extreme delicacy. This has apparently been the cause of considerable confusion in the published descriptions. In *M. domingensis,* for example, the involucre is said to be laciniate-ciliate or shortly fimbriate; in *M. inflexa,* laciniate; in *M. disjuncta,* sparingly dentate or subentire; in *M. caracensis,* shortly fimbriate. FIG. 12, E-J, brings out the range of variation observed by the writer. The nearest approach to an entire condition is seen in Fig. 12, E, although even here the margin is distinctly and closely crenulate; in Fig. 12, F, the crenulate condition is more pronounced, some of the teeth being two cells long; in Fig. 12, G, a crenulate portion directly adjoins a short-ciliate portion, in which the cilia are two or three cells long; in Fig. 12, H-J, taken from a single receptacle, the variation to be expected is shown with especial clearness, some of the marginal teeth or cilia being straight and some curved. In all probability the laciniate and fimbriate involucres of the descriptions have been the result of irregular tears in old material.

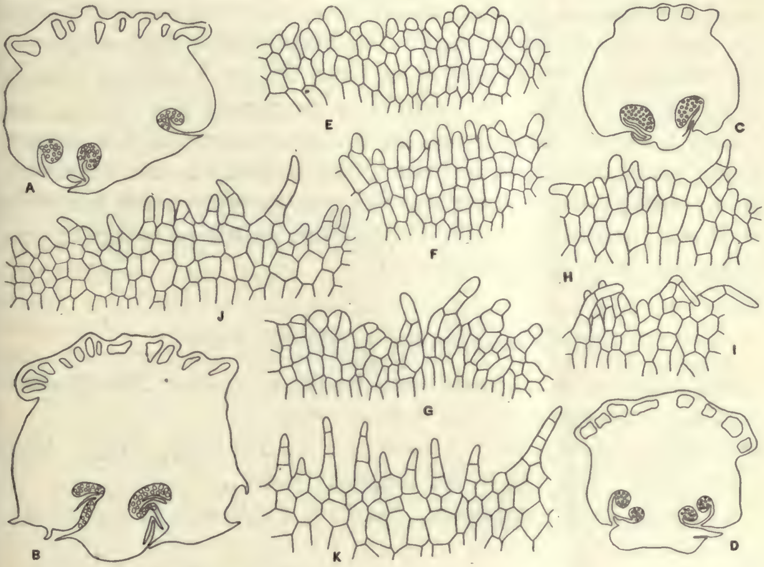

Fig. 12. Marchantia domingensis Lehm. & Lindenb.

Anatomical details. A. Stalk of male receptacle, cross-section, x 40. B-D. Stalks of female receptacles, cross-sections, x 40, C having been cut near base. E-J. Parts of involucres, x 100: H and I were dissected from a single involucre; J, from another involucre on the same receptacle. K. Part of cupule, x 100. A. Florida, *N. L. T. Nelson 47.* B, F. Texas, *F. D. Heald.* C, H-J. Jamaica, *E. G. Britton 668.* D. St. Kitts, *Britton & Cowell 626.* E. Alabama, *Earle & Baker 52.* G. Guatemala, *Cook & Griggs 82.* K. Cokely, Jamaica, *W. Harris.*

In the case of the male receptacle, Sullivant states that the number of lobes in *M. disjuncta* is normally seven, although some of his figures show six, four, or only three lobes. Stephani places the number at about eight in his account of *M. disjuncta* but makes no mention of the male receptacles in *M. domingensis, M. Elliottii* or *M. caracensis.* Apparently a good deal of variation is to be expected from varying environmental conditions, as Goebel[32] has recently noted, poorly developed material showing a reduced number of lobes. Even when only two rays are present the upper part of the stalk shows two rhizoid-furrows, although the lower part shows but one. The deeply lobed male receptacle will distinguish *M. domingensis* from all the preceding species except *M. breviloba.* In addition to its greater size this species differs from *M. domingensis* in the appendages of the ventral scales, which are larger and much less toothed; in the slime cells of the thallus, these structures being apparently never found in *M. domingensis;* in the less deeply lobed female receptacles; and in the distinctly ciliate involucres.

7. MARCHANTIA PAPILLATA Raddi

Marchantia papillata α brasiliensis Raddi, Mem. Soc. Ital. Modena **19**: 44. 1823; **20**: *pl. 6a, f. 3, 4.* 1829.

Marchantia platycnemos Schwaegr.; Gaudichaud, Freyc. Voy. Bot. 218. 1827 (as to the Brazilian plant).

Marchantia androgyna Nees; Martius, Fl. Brasil. **1**: 308. 1833. Not L.

Marchantia subandina Spruce, Trans. Bot. Soc. Edinburgh **15**: 561. 1885.

Thallus dull green, not glaucous, sometimes more or less pigmented with purple, usually 1.5-3 mm. wide and 0.8-1.15 cm. long, dichotomous, the forks usually only 1.5-3 mm. apart, texture firm, margin entire; epidermis composed of cells with more or less thickened walls, usually in a single layer, mostly 20-50μ long (averaging about 30μ) and 12-20μ wide (averaging about 15μ), papillae absent; pores (with their surrounding cells) mostly 50-70μ long and 40-45μ wide, surrounded usually by five (or six) rows of cells (two or three in the upper series and three in the lower series), each row usually composed of four cells (rarely of three or five), the lowest row of the upper series sometimes with from five to eight cells, inner opening usually four-sided (rarely with three or five sides), the sides concave, bounding cells more or less obscured by a resinous deposit; air-chambers low, isodiametric or somewhat elongated, their outlines very indistinct when viewed through the epidermis, present everywhere, rows of photosynthetic cells usually two or three cells long; compact ventral tissue about fifteen cells thick in the median portion; the walls sometimes pigmented, more or less thickened and showing distinct pits, sclerotic cells scattered, mostly fifteen to twenty in a cross-section, more abundant in the median portion but often present in the wings, sometimes clearly visible without sectioning, slime cells lacking; ventral scales in two rows, the row of laminar scales more or less irregular but tending to alternate with the median scales and not much nearer the margin; appendages of the median scales ovate, when well developed mostly 0.3-0.45 mm. long and 0.25-0.3 mm. wide but sometimes considerably smaller, apex apiculate, acute, or cuspidate, margin subentire or usually more or less closely denticulate or dentate, the teeth irregular, mostly one or two cells long, rarely larger and more lobe-like, cells showing a gradual and slight decrease in size toward the margin, median cells usually longer than broad, mostly 40-60μ long and 25-30μ wide, marginal cells mostly 30-45μ long and 15-25μ wide, irregular but usually with the long axis at right angles or nearly so to the margin, cells containing oil-bodies apparently always lacking, male receptacle borne on a stalk about 3 mm. long with two rhizoid-furrows, the disc about 0.8 cm. wide, deeply four- to eight-lobed, the lobes or rays palmately disposed (the basal sinus being very broad), about 3 mm. long and 1 mm. wide, rounded at the apex and with a thin wavy margin, ventral scales imbricated: female receptacle borne on a stalk 1.5-2 cm. long, with two rhizoid-furrows and a single broad dorsal band of air-chambers, the disc mostly 3-4 mm. broad, normally nine-lobed (but sometimes with five to eight lobes), the lobes or rays 1-1.5 mm. long and about 1 mm. wide, distinctly dilated at the truncate to emarginate apex, strongly convex on upper surface, basal sinus broader than the others, upper surface of disc with a low median protuberance; involucre very delicate, irregularly lobed and crispate, otherwise entire or slightly and irregularly crenulate; pores yellowish brown, about 26μ in diameter, outer face bearing a series of very low ridges not forming a network, margin narrow and often indistinct, less than 2μ broad; elaters about 8μ broad, bispiral: cupules sparingly and irregularly denticulate to short-ciliate, the teeth being projections of marginal cells or from one to four cells long, epidermal papillae lacking. (FIG. 13.)

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[32] Organographie der Pflanzen, 2d ed. 699. 1915.

The following specimens have been examined:

BRAZIL: Rio de Janeiro, without date, *G. Raddi* (N. Y., type); without date, *J. Milne* (N. Y.); without definite locality or date, *W. J. Burchell 1857* (N. Y.).

Paraguay: Paraguari, August, 1883, *B. Balansa* (N. Y., U. S., distributed in Pl. du Paraguay *4006,* and listed by Stephani in Rev. Bryol. **14**: 58. 1887).

Peru: near the Rio Huallaga, *R. Spruce* (type of *M. subandina,* distributed in Hepaticae Spruceanae).

Bolivia: Isapuri, October, 1901, *R. S. Williams 2145* (N. Y., Y.).

Although the writer has seen no specimens of *M. papillata* from other localities, the following records may be cited from the literature:

Cuba: "ad terram in locis humidis prope S. Marcos," *Ramon de la Sagra,* gemmiparous specimens (listed by Montagne in Ramon de la Sagra, Hist. Fis. Pol. y Natur. Cuba **9**: 290. 1845).

Martinique: without definite locality or collector's name (listed by Underwood in Bot. Gaz. **20**: 70. 1895); without definite locality or date, *A. Plée 1821* (listed by Bescherelle in Jour. de Bot. **7**: 193. 1893).

Brazil: Rio Janeiro, *C. Gaudichaud* (listed, as *M. platycnemos,* in Freyc. Voy. Bot. 218. 1827); Minas Geraes, *K. von Martius* (listed by Nees von Esenbeck in Naturg. Europ. Leberm. **4**: 109. 1838); "ad muros humidos aquaeductus, loco Corcovado dicto" near Rio de Janeiro, and "ad terram juxta flumen Rio Negro", *A. d'Orbigny* (listed by Montagne in D'Orbigny, Voy. dans l'Amér. Mérid. 7^2: 397. 1839).

Falkland Islands: without definite locality or date, *C. Gaudichaud* (listed, as *M. platycnemos,* in Freyc. Voy. Bot. 218. 1827).

The original *M. papillata* included two varieties, *α. brasiliensis* and *β. italica.* Nees von Esenbeck[33] soon showed, however, that the second variety was a synonym of *M. paleacea;* he therefore reserved the name *M. papillata* for the first variety, a course which has been followed by subsequent writers. He was also the first to recognize the fact that his Brazilian *M. androgyna* belonged to *M. papillata* and to include *M. platycnemos* among the synonyms of the same species. It is possible, however, that *M. platycnemos* ought still to be maintained as a species, at least in part. It was based on three specimens, the first from the

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[33] Naturg. Europ. Leberm. **4**: 101. 1838.

Marianne Islands in the Pacific, the second from the Falkland Islands, and the third from Brazil. The first specimen may be regarded as the type of the species since it is mentioned first. A portion of this specimen in the herbarium of the New York Botanical Garden shows that the type is distinct from *M. papillata,* as here understood, but that it is very close to *M. emarginata* and perhaps synonymous with it. Nees von Esenbeck's inclusion of *M. platycnemos* among the synonyms of *M. papillata* must therefore be considered as applying to a part only of Schwaegrichen's species as originally described.

Of Raddi's original figures, *f. 3* is said to represent male plants and *f. 4,* female plants. This is obviously an error, the receptacles shown under *f. 3* being clearly female. In *f. 3a* six receptacles are drawn, two showing six lobes apiece and one seven lobes, the number being doubtful in the other three. In *f. 3b* an enlarged receptacle with nine lobes is represented; the lobes show clearly the enlarged apices with more or less distinct emarginations, and no difference is brought out between the basal sinus and the others. The receptacles shown in *f. 4* are very doubtful and bear a disc which is scarcely lobed at all. Unless drawn from very immature material they probably belong to some other species than *M. papillata.* It should be noted, however, that the Synopsis describes the disc of the male receptacle as "subdimidiato excentrico marginibus repando-lobatis," thus evidently recognizing a male receptacle in Raddi's so-called female receptacle; but Stephani apparently discards this view, since he does not mention the male receptacles at all.

The specimen of *M. papillata,* quoted above as the type, is in the Mitten herbarium and was received from Hooker. It is very fragmentary but includes three female receptacles, two showing eight lobes apiece and the third, seven lobes. The dilated apices of the lobes and the broader basal sinus are clearly apparent. This specimen has been carefully compared with the other specimens cited and found to agree with them in all essential respects. Spruce compares *M. subandina* with both *M. papillata* and *M. Berteroana,* which he knew from description only. He ascribes to the species, however, a polyoicous inflorescence and monospiral elaters. Unfortunately the specimens which he distributed, although agreeing with his description in other respects, show a strictly dioicous inflorescence and bispiral elaters, so that his statements about the inflorescence and elaters must have been based on a misconception.

The thallus of *M. papillata* is even smaller than in *M. domingensis;* it is, in fact, the smallest American species known at the

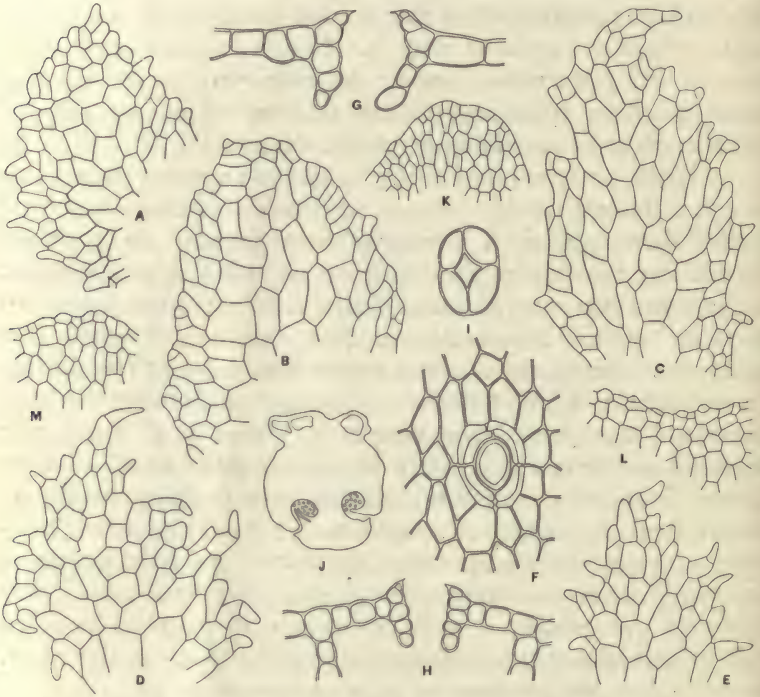

FIG. 13. MARCHANTIA PAPILLATA Raddi

Appendages of ventral scales and other anatomical details. A-E. Appendages of ventral scales, B and C having been dissected from the same thallus, x 100. F. Epidermal pore of thallus, surface view, x 225. G, H. Pores in cross-section, x 225. I. Inner opening of pore, x 225. J. Stalk of female receptacle, cross-section, x 40. K-M. Parts of involucres, x 100. A. Brazil, *G. Raddi,* type. B, C, G, J, K. Paraguay, *B. Balansa 4006.* D-F, H, I. Bolivia, *R. S. Williams 2145.* L, M. Peru, *R. Spruce,* type of *M. subandina.*

present time. So far as the structure of the thallus is concerned the agreement with *M. domingensis* is very close. Slime cells seem to be always lacking in both species and sclerotic cells are usually abundant and equally conspicuous. The appendages of the median scales, moreover, are essentially the same, although the marginal teeth in *M. papillata* exhibit a slightly wider range of variability. There are, however, certain differences in the epidermal cells and pores which deserve some emphasis. The cells and pores are not only distinctly smaller than in *M. domingensis,* but the pores are constructed on a simpler plan, the opening being surrounded by fewer rows of cells and the number of cells in each row being less subject to variation. The cells bounding the inner opening tend to be more convex. It must be admitted that these differences are very slight and might not deserve much attention if they were not supported by other differences derived from the female receptacle.

The variability of the receptacles with respect to the number of lobes has already been commented upon in connection with the type specimen and becomes still more apparent from a study of the published descriptions. According to Nees von Esenbeck the usual number of lobes is seven, eight to ten being sometimes present; according to Spruce nine lobes are present in *M. subandina;* according to Schiffner, who studied Raddi's specimen in the Lindenberg herbarium, the normal number of lobes in *M. papillata* is six, a larger number being unusual; according to Stephani both *M. papillata* and *M. subandina* have nine lobes apiece. In the writer's opinion nine may be regarded as the normal number of lobes, although a smaller number frequently occurs. In the number of lobes, therefore, the species agrees on the whole with *M. domingensis.* The receptacle, however, is smaller; the lobes are more dilated and more frequently emarginate at the apex; the medium protuberance of the disc and the convexity of the lobes are more pronounced; and the involucre is less variable, being entire or nearly so and apparently never bearing elongated teeth or cilia. Just how constant these differences are can only be established by the study of more material. If they should be found to intergrade it might become necessary to reduce *M. domingensis* to synonymy under *M. papillata,* but the differences seem sufficient at the present time to justify the maintenance of both species as valid.

The group of species to which *M. domingensis* and *M. papillata* belong is well represented in paleotropic regions. Among the species which are referable to this group *M. emarginata* R. Bl. & N.,[34] *M. linearis* Lehm. & Lindenb.,[35] and *M. Schaden-*

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[34] Nova Acta Acad. Caes.-Leop. Carol. 12: 192. 1824.

[35] Lehmann, Pug. Plant. 4: 8. 1832.

bergii Steph.[36] may be especially mentioned. The first of these has a very extensive distribution and is reported by Stephani from China, the Himalayas, Japan, Java and the Philippine Islands; the second is known from various parts of India; the third, from the Philippine Islands only. These three species are closely related, and the differences brought out by Stephani are not very convincing. As indicated in the synonymy the authors of the Synopsis referred specimens of *M. domingensis* to *M. linearis,* an error first pointed out by Stephani. Since, however, *M. linearis* is so closely related to *M. emarginata* it will be sufficient to compare the two American plants with this latter species, a full description of which has been published by Schiffner.[37]

In size *M. emarginata* is comparable with *M. domingensis;* in the structure of the female receptacle, with *M. papillata.* It agrees with both species in the possession of sclerotic cells in the thallus; in the general features of the ventral scales; in the closely toothed appendages of the median scales; and in the structure of the involucre. Schiffner describes the latter as lobed and almost entire, but it is sometimes possible to detect a few short teeth, especially toward the outer extremities. A few differences in the structure of the thallus may be mentioned. In *M. emarginata,* for example, although sclerotic cells are present they are never so abundant or so conspicuous as they sometimes are in *M. domingensis.* The thallus is further distinguished by the possession of slime cells and, according to Schiffner, by the occasional presence of epidermal papillae. It would be unwise, however, to lay much stress on any of these differences, since the structures on which they are based are so very variable.

The female receptacle of *M. emarginata* shows the features described under *M. papillata* in an intensified form. The median protuberance is not only more pronounced, but the lobes themselves might almost be described as costate, while their apices are more markedly dilated and emarginate. These features are of course subject to variation. The male receptacles are distinguished by their long and slender stalks. The cupules are much the same as in two American species.

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[36] Bull. Herb. Boissier 7: 524. 1899.

[37] Fl. de Buitenzorg 4: 31. 1900.

8. MARCHANTIA BESCHERELLEI Steph.

Marchantia Beschereliei Steph. Rev. Bryol. **15**: 86. 1888.

Thallus dull green, not glaucous, slightly or not at all pigmented with purple, mostly 5-7 mm. wide and 2-3 cm. long, dichotomous, the forks 1-1.5 cm. apart, texture very delicate, margin entire, sometimes vaguely and irregularly plicate; epidermis composed of cells with very thin walls, in a single layer, mostly 40-70μ long (averaging about 50μ) and 20-35μ wide (averaging about 25μ), papillae absent; pores (with their surrounding cells) mostly 160-200μ long and 120-160μ wide, surrounded usually by seven or eight rows of cells, three or four in the upper series and four in the lower series, the two lower rows of the upper series usually composed of ten to twelve or even more cells apiece, the other rows of five or six cells, rarely of only four cells apiece, inner opening usually five- or six-sided, rarely only four-sided, with the sides strongly concave, resinous deposit slight; air-chambers low, somewhat elongated, their boundaries indistinct when viewed through the epidermis, present everywhere except close to the margin, rows of photosynthetic cells usually two or three cells long; compact ventral tissue mostly twelve to fifteen cells thick in the median portion, abruptly thinning out in the wings, the walls somewhat pigmented, slightly or not at all thickened, sclerotic cells scattered, sparingly developed, slime cells lacking; ventral scales in two rows, the laminar scales alternating with the median scales and not much nearer the margin; appendages of the median scales ovate, when well developed mostly 0.5-0.6 mm. long and 0.35-0.45 mm. wide but often smaller, apex acute, margin sparingly and irregularly dentate, the teeth in the basal portion often larger and sharper and sometimes lobe-like, cells showing a gradual and slight decrease in size toward the margin, median cells usually longer than broad, mostly 50-80μ long and 30-40μ wide, marginal cells mostly 30-50μ long and 15-25μ wide, irregular but usually perpendicular or nearly so to the margin, cells containing oil-bodies lacking: male receptacle borne on a stalk about 1 cm. long (in the only example studied), with two rhizoid-furrows and (apparently) with a single broad dorsal band of air-chambers, the disc 7 mm. broad, with four short and rounded lobes or rays with thin margins, basal sinus more than 180 degrees, the other sinuses narrow, ventral scales apparently in two rows: female receptacle borne on a stalk about 2 cm. long (in the only example studied), with two rhizoid-furrows and dorsal air-chambers apparently in two distinct bands, the disc about 7 mm. wide, with five short and rounded lobes or rays, upper surface of receptacle plane, basal sinus a straight line or nearly so; involucre delicate, closely and irregularly dentate, some of the teeth three or four cells long and two to four cells wide at the base, other teeth smaller: spores (according to Stephani) yellowish brown, 23μ in diameter, erose along the ridges, otherwise smooth. (FIG. 14.)

Known only from the following specimens:

BRAZIL: Rio Janeiro, *A. Glaziou 6348* (B., N. Y., type); *E. Ule 123* (B., listed by Stephani in Bull. Herb. Boissier 7: 406. 1899).

The material of *M. Beschérellei* in the Boissier herbarium, portions of which have been examined by the writer, includes the female type specimens and the male specimens collected by Ule. A sterile specimen of the type material, in the Mitten herbarium, has likewise been examined. It will be noted that Spruce,[38] who published a list of Glaziou's specimens, makes no mention of No. 6348. According to the label on the specimen in the Mitten herbarium, Spruce thought that this number might perhaps represent a new genus of the Marchantiaceae, but he evidently reached no definite conclusion about it. Probably he had only sterile material at his disposal, because the female receptacle shows at once that Stephani was correct in referring the plant to the genus *Marchantia.* Unfortunately the specimens studied by the writer were very fragmentary and remained shriveled after long soaking in water. It was therefore impossible to gain from them an adequate idea of the species, and some of the statements made about the structure must be regarded as more or less tentative.

The texture of *M. Beschérellei* is exceedingly delicate and the thallus thins out abruptly in passing from the midrib to the wings. In the latter the ventral tissue becomes reduced, according to Stephani, to a single cell in thickness, and the marginal portion, where the entire thallus is only one cell thick, is four cells broad. Although the air-chambers are low the photosynthetic tissue is well developed and characteristic and the pores are large and complex.

The appendages of the ventral scales are composed of cells which show a gradual decrease in size in passing from the median portion toward the margin, resembling in this respect the appendages of *M. domingensis* and *M. papillata,* but the margin itself is very different in being much more sparingly toothed. Among the preceding species the appendages find their closest counterparts in *M. paleacea* and *M. breviloba.* Their apices, however, are more uniformly sharp-pointed, their teeth tend to be sharper, and their marginal cells are more frequently placed at right angles to the margin.

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[38] Rev. Bryol 15: 33, 34. 1888.

With regard to the female receptacle there are marked discrepancies between Stephani's original description and the later description of his Species Hepaticarum. According to the original account the disc is green, convex in the middle, five-lobed for one third the distance from margin to center, the lobes being rounded and shortly incised at the apex, plane and horizontal, delicate and beautifully reticulated. Doubt is thrown, however, upon the constancy of the five-lobed condition. The involucres are described as reddish, firm in texture, and shortly ciliate. According to the later account the disc is brownish green, delicate and veiny, plano-convex in the center, and nine-lobed, the lobes being plane, connate almost to the apex, rounded and very shortly incised. The involucre is said to be hyaline, small-lobed, irregularly and shortly fimbriate. In the only receptacle seen by the writer the disc is five-lobed, the two basal lobes being only about

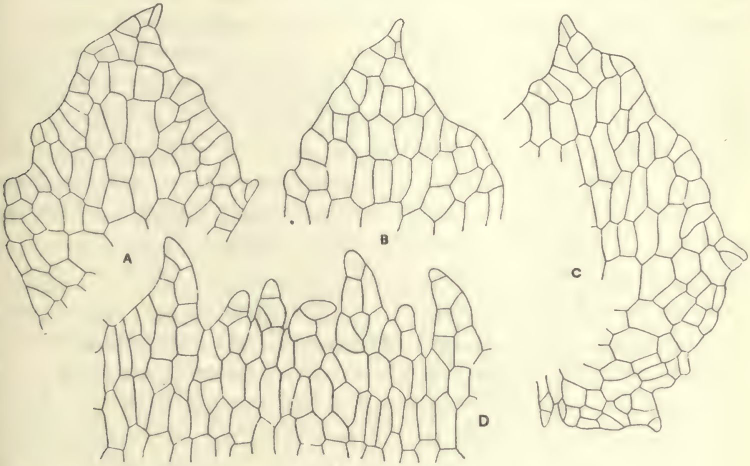

FIG. 14. MARCHANTIA BESCHERELLEI Steph.

Anatomical details. A-C. Appendages of ventral scales, x 100. D. Part of an involucre, x 100. Drawn from the type specimen.

half as broad as the other three lobes and the sinus being practically a straight line. The three broad lobes appear to be very shortly incised at the apex but they are actually only emarginate, the apparent incision being really filled by an extension of the membranous margin of the lobes. In other respects the lobes agree with Stephani's accounts. The involucre is distinctly toothed, but the teeth are scarcely long enough or sharp enough to be described as cilia or fimbriations. The discrepancy in the number of lobes which Stephani's accounts bring out might of course be due to a variability of the species, which could only become evident through the study of more extensive material.

It is unfortunate that the structure of the stalks of the receptacles must be left in doubt. In Stephani's original description the stalk of the female receptacle is said to bear two dilated dorsal lamellae but no mention is made of these in his later account, and nothing whatever is said about the structure of the stalk of the male receptacle. From the scanty supply of material available, it has been impracticable to prepare cross-sections of stalks, so that the writer is unable to confirm Stephani's statement or to add further details. If the stalk of the male receptacle bears a band of air-chambers the relationship might be with *M. domingensis.* If two bands of air-chambers are present in the stalk of the female receptacle, a relationship with *M. chenopoda* would be indicated, and it is worthy of note that Mitten referred Glaziou's type specimen to *M. brasiliensis* Lehm. & Lindenb., a species which is now included among the synonyms of *M. chenopoda* L. According to our present knowledge, however, the systematic position of the species can hardly be determined.

9. MARCHANTIA CHENOPODA L.

Marchantia chenopoda L. Sp. Plant. 1137. 1753.
Marchantia androgyna L. *l. c.* 1138. 1753 (in part); Swartz, Fl. Ind. Occ. 1882. 1806.
Chlamidium indicum Corda; Opiz, Beitr. zur Naturg. 647. 1828 (*nomen nudum*).
Marchantia Swartzii Lehm. & Lindenb.; Lehmann, Pug. Plant. **4**: 9. 1832.
Marchantia cartilaginea Lehm. & Lindenb. *l. c.* **4**: 31. 1832.
Marchantia brasiliensis Lehm. & Lindenb. *l. c.* **4**: 32. 1832.

Grimaldia peruviana Nees & Mont.; Montagne, Fl. Boliv. in D'Orbigny, Voy. dans l'Amér. Mérid. 7^2: 53. 1839.
Marchantia peruviana Nees; G. L. & N. Syn. Hep. 538. 1847.
Marchantia Dillenii Lindb. Krit. Gransk. Hist. Musc. 47. 1883.

Thallus pale or yellowish green, sometimes more or less glaucous, usually tinged with purple or brownish on the lower surface, usually 4-7 mm. wide and 2-3 cm. long, dichotomous, the successive forks averaging about 1 cm. apart, texture varying from firm and often leathery to delicate, margin entire; epidermis composed of cells with slightly thickened walls, often in two layers, mostly 30-60μ long (averaging about 40μ) and 15-30μ wide (averaging about 22μ), papillae absent, slime cells often present, averaging about 60μ in diameter; pores variable in size, usually (with their surrounding cells) measuring 100-170μ in length and 80-130μ in width but sometimes considerably smaller, usually surrounded by seven rows of cells (four in the upper series and three in the lower), more rarely by six, eight or even nine rows, the two upper rows of the upper series and the two lower rows of the lower series composed of four to six cells apiece, the third row of each series usually of twice as many, and the fourth row of the upper series usually of a much larger number, sometimes of as many as eighteen, inner opening four- to six-sided with the sides straight or more or less concave, cell-walls mostly smooth throughout; air-chambers of medium height, isodiametric or somewhat elongated, their boundaries usually distinct but sometimes obscure when viewed through the epidermis, present everywhere, cells of partition walls sometimes including slime cells, rows of photosynthetic cells usually three or four cells long; compact ventral tissue mostly twenty to twenty-five cells thick in the median portion, the walls sometimes pigmented, more or less thickened and showing distinct pits, sclerotic cells usually distinct, scattered, mostly twenty to fifty in a cross-section, usually abundant in both median portion and wings, slime cells usually present, scattered, tending to be more abundant in the wings, rarely more than six or eight in a cross-section; ventral scales in two distinct rows, the laminar scales alternating with the median scales and not much nearer the margin; appendages of the median scales very variable, lanceolate to broadly ovate, when well developed mostly 0.45-0.65 mm. long and 0.3-0.4 mm. wide but sometimes considerably smaller, apex acuminate, acute or apiculate, margin entire or variously and irregularly toothed, the teeth rarely numerous and often restricted to the basal portion, cells of about the same size throughout or showing a slight and gradual decrease in size toward the margin, median cells usually longer than broad, mostly 60-90μ long and 25-40μ wide, marginal cells mostly 30-70μ long and 20-35μ wide, irregular, the long axis varying from parallel to perpendicular to the margin, cells containing oil-bodies usually absent, rarely one or two present: male receptacle borne on a stalk mostly 1-2 cm. long, with two rhizoid-furrows and no air-chambers, the disc mostly 0.8-1 cm. broad, deeply lobed, the lobes or rays mostly four, rarely five or six, palmately disposed, the basal sinus sometimes more than 180 degrees broad, the lobes mostly 5-7 mm. long and 1.5-2 mm. wide, rounded, with a thin wavy margin extending across the basal sinus, ventral scales imbricated, mostly in two rows: female receptacle borne on a stalk 2-4 cm. high, with two rhizoid-furrows and two narrow dorsal bands of air-chambers, the disc convex, mostly 6-8 mm. wide, shortly five-lobed, the lobes or rays convex, rounded and separated by shallow sinuses, the basal sinus much broader than the others and approximating a straight line; involucre firm, the margin sparingly dentate to closely ciliate or laciniate, the teeth or cilia varying from one to five cells in length, sometimes forking; spores brownish yellow, about 26μ in diameter, narrowly margined, the outer face bearing a few low ridges not forming a network; elaters about 6μ wide, bispiral: cupules closely short-ciliate, the cilia mostly two to four cells long, outer surface without papillae. (FIGS. 15-20.)

A widely distributed species is tropical America. The following specimens have been examined:

PUEBLA: banks of Avenida Hidalgo and path to barranca, Tezuitlan, October, 1908, *Barnes & Land 537*.

VERA CRUZ: Jalapa and vicinity, September, 1906, *Barnes & Land,* no number (Y.); July, 1908, *C. G. Pringle 15326* (Y., distributed in Pl. Mex. under a manuscript name of Stephani); November, 1908, *Barnes & Land 556, 614, 626a* (Y.); vicinity of Orizaba, November, 1908, *Barnes & Land 631, 670* (Y.).

GUATEMALA: without definite locality or date, *Godman & Sabin* (N. Y.); Santa Rosa, September, 1894, *Heyde & Lux 6293* (N. Y.); near the Finca Sepacuité, Alta Verapaz, March and April, 1902, *Cook & Griggs 83, 141, 394* (U. S., Y.); trail from Pangós to Sepacuité, Alta Verapaz, January, 1908, *Maxon & Hay 3111* (U. S., Y.); Coban, Alta Verapaz, *H. von Tuerckheim 6074* (N. Y.).

COSTA RICA: Bagnar, Angostura, June, 1874, *O. Kuntze 2102* (N. Y.); la Verbena, Alajuelita, August, 1894, *A. Tonduz 15562* (N. Y., Y., distributed by E. Levier under a manuscript name of Stephani); Rio Turrialba, March, 1896, *J. D. Smith* (N. Y.); Cuesta de la Vieja, road to San Carbos, April, 1903, *Cook & Doyle 111* (U. S., Y.); Juan Vinas, April, 1903, *Cook & Doyle 301* (U. S., Y.); vicinity of La Palma, May, 1906, *W. R. Maxon 489* (U. S., Y.).

PANAMA: without definite locality or date, *B. Seemann* (N. Y.); Darien, April and June, 1908, *R. S. Williams 1083, 1084* (N. Y., Y.).

CUBA: without definite localities or dates, *C. Wright* (distributed in Hep. Cubenses).

JAMAICA: without definite localities or dates, *Fordyce, W. Wright;* Whitfield Hall, December, 1896, *W. Harris 11063* in part (N. Y.); Moody's Gap, March, 1895, *W. Harris 5671* (N. Y., U. S., Y.); vicinity of Cinchona, November, 1902, *F. S. Earle 397a* (N. Y., Y.); July, 1903, *A. W. Evans 248* (Y.); Mount Airy, trail to Tweedside, April, 1903, *W. R. Maxon 864* (U. S., Y.); Second Breakfast Spring, near Tweedside, April, 1903, *W. R. Maxon 880* (U. S., Y.); Morce's Gap, August, 1906, *A. W. Evans 405* (Y.); Cuna Cuna Gap, September, 1908, *E. G. Britton 990* (N. Y., Y.); March, 1909, *Britton & Howe 4032* (N. Y., Y.).

PORTO RICO: Adjuntas, March, 1886, *P. Sintenis 51* (N. Y., U. S., Y., listed by Stephani in Hedwigia 27:294. 1888); road from Ponce to Adjuntas, July, 1901, *Underwood & Griggs 732* (N. Y., U. S., Y.); Military Road, north of Cayey, June, 1901, *Underwood & Griggs 278* (U. S., Y.); road from Utuado to Arecibo, July, 1901, *Underwood & Griggs 839* (U. S., Y.); near Cayey, July, 1900, *A. W. Evans 95* (Y.); between Ponce and Utuado, March, 1906, *Britton & Marble 778* (N. Y., Y.); Mount Morales, near Utuado, March, 1906, *M. A. Howe 1098* (C. C. H., N. Y., Y.); summit of Loma la Mina, Sierra de Naguabo, July, 1914, *J. A. Shafer 3337* (N. Y., Y.); La Juanita, near Las Marias, February, 1915, *E. G. Britton 3964* (N. Y., Y.); La Chiquita, near Maricao, February, 1915, *E. G. Britton 4099* (N. Y., Y.); *Britton & Cowell 4296* (N. Y., Y.); between Adjuntas and Ponce, March, 1915, *E. G. Britton 5367* (N. Y., Y.): Maricao, July, 1915, *F. L. Stevens 1844* (N. Y., Y.); Gigante, July, 1915, *F. L. Stevens 1797* (N. Y., Y.).

GUADELOUPE: without definite locality, 1874, *T. Husnot* (distributed in Pl. des Antilles *196*); Gombeyre, 1897-1900, *Père Duss 391* (N. Y.); Basse Terre, 1898 *Père Duss 253* (N. Y., determined as *M. brasiliensis* by Stephani).

Dominica: Laudat, 1903, *F. E. Lloyd 76, 78, 285* (N. Y., Y.). Martinique: St. Pierre, 1899-1900, *Père Duss 390* (N. Y.,

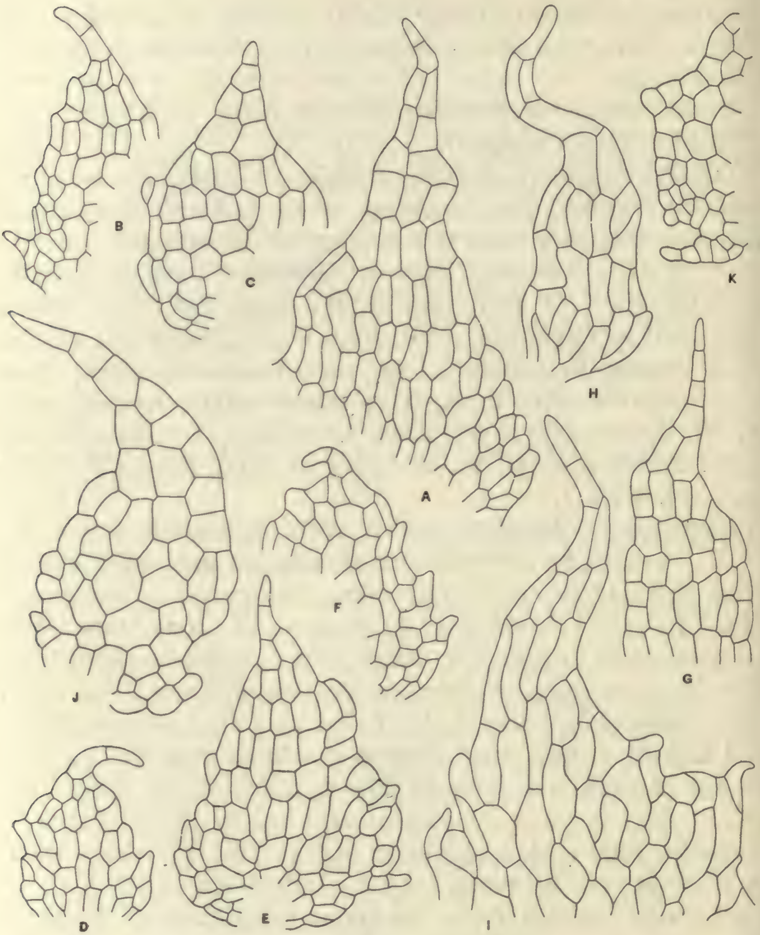

Fig. 15. Marchantia chenopoda L.

Appendages of ventral scales, x 100; K represents the basal portion of an appendage. A. Vera Cruz, 1906, *Barnes & Land.* B-G. Vera Cruz, *Barnes & Land 614.* H, I. Vera Cruz, *Barnes & Land 626a.* J, K. Guatemala, *Cook & Griggs 83.*

determined as *M. brasiliensis* by Stephani); Carbet, 1899, *Père Duss 342 bis* (N. Y.); Morne Rouge, August, 1901, *Père Duss 581* (N. Y.).

Grenada: Grand Etang, 1913, *R. Thaxter* (H., Y.).

Venezuela: near Caripe, *A. von Humboldt* (Y., specimen from the Hooker herbarium, labeled *"Humboldt 235,"* presumably the basis for the record in Nov. Gen. Sp. Plant. **7**: 99. 1825); without definite locality or date, *Funck & Schlim 337* (N. Y.).

Colombia: Andes Bogotenses, *W. Weir* (N. Y.).

Brazil: Orgaos Mountains, *C. Gaudichaud* (N. Y., specimen from the Montagne herbarium, labeled simply *"Brasilia,"* presumably the basis for the record in Voy. Corv. la Bonité, Bot. **1**: 209. 1844-46); Morro Velho, no date, *G. Gardner 131* (N. Y.); Rio de Janeiro, no date, *J. Milne* (N. Y.); *A. Glaziou 17992* (N. Y., listed by Spruce in Rev. Bryol. **20**: 60. 1893); Jacobina, Mattogrosso, October, 1872, *O. Kuntze* (N. Y., sterile and somewhat doubtful); near Sao Paulo, April, 1905, *A. Usteri 1* (Y.).

Ecuador: Baños, *R. Spruce* (listed in Trans. Bot. Soc. Edinburgh **15**: 562. 1885, and distributed in Hep. Spruceanae).

Peru: near Tarapoto, *R. Spruce* (distributed in Hep. Spruceanae); Ollantaytambo, May, 1915, *Cook & Gilbert 755* (U. S., Y.).

Bolivia: near Irupana, *A. d'Orbigny 226* (M., type of *Grimaldia peruviana*); Yungas, 1885, *H. H. Rusby, 3001, 3002, 3003, 3004* (N. Y., U. S., listed by Spruce in Mem. Torrey Club **1**: 140. 1890); 1892, *M. Bang 1545* (N. Y.); July, 1893, *P. Jay 71* (N. Y., Y.); Tumupasa, December, 1901, *R. S. Williams 2143* (N. Y., Y.).

Galapagos Islands: Albemarle Island, August, 1906, *A. Stewart 6876.*

The following additional stations, recorded in the literature, are likewise of interest:

Oaxaca: Mirador and Comaltepec, *F. Liebmann* (listed by Gottsche in Mex. Leverm. 268. 1863).

Vera Cruz: near Orizaba and at Cordoba, 1855, *F. Müller* (listed by Gottsche, *l. c.*).

Costa Rica: near San José, *H. Pittier 6004, 6049;* Marais de la Palma, *H. Pittier 6018, 6024* (both listed by Stephani in Bull. Soc. Bot. Belgique **31**: 180. 1892).

Jamaica: without definite locality or date, *P. Collinson* (type of *M. Dillenii*).

MARTINIQUE: Morne de la Calabasse, without date or collector's name (type, cited by Plumier); without definite locality, date, or collector's name (type of *M. cartilaginea*); without definite locality or date, *Hahn 1347; T. Husnot 197, 198* (the last three listed by Bescherelle in Jour. de Bot. 7: 193. 1893).

FRENCH GUIANA: near Cayenne, 1835-49, *Leprieur 1386* (listed by Montagne in Ann. Sci. Nat. Bot. IV. 3: 320. 1855).

VENEZUELA: Merida, *K. Goebel* (figured in Organographie der Pflanzen 258. *f. 157.* 1898).

COLOMBIA: Muzo, Fusagasuga and Puripi, 1859, *A. Lindig 1715, 1718, 1719, 1722, 1723* (listed by Gottsche in Ann. Sci. Nat. Bot. V. 1: 186. 1864).

PERU: Rio Huallaga, November, 1902, *E. Ule 527* (listed by Stephani in Hedwigia 44: 223. 1905).

BRAZIL: "Montagne d'Estrella," *G. Raddi* (cited by Raddi, see below); without definite locality or date, *F. Sellow* (type of *M. brasiliensis*).

The specimens recorded by Schiffner from the Fiji Islands (Leberm. Forschungsr. S. M. S. "Gazelle" 43. 1890) are described as having ciliate-dentate ventral scales and would probably now be referred to some other species.

The interpretation of *M. chenopoda* is beset with difficulties, and a history of the species may therefore be in place. The Linnaean description or diagnosis is very short and reads, "Marchantia calyce communi dimidiato palmato quadrifido." If the term "calyx" signifies the female receptacle this description would not apply accurately to any of the known American species, where a four-parted receptacle occurs only as an abnormality. If the term signifies the male receptacle there are several species to which the description might perhaps apply. In any case it would be quite impossible to identify a definite species by means of the Linnaean description alone.

Unfortunately the only synonym which Linnaeus quotes, the "Lichen anapodocarpos" of Plumier, is likewise insufficient to lead to a positive conclusion. Plumier[39] described his plant from material collected on the Morne de la Calabasse in Martinique. Linnaeus cites the original description and figure and also the later description and figure published by Dillenius.[40] Plumier's figure represents certain reproductive parts in detail and a thallus with a sinuate or vaguely lobed margin, branching occasionally by forking and apparently also by ventral outgrowths. From the tips of some of the branches the four-lobed receptacles on short stalks take their origin and clearly bring the growth of the branches to an end. In two cases—possibly in three—five-lobed receptacles are shown. In his text Plumier compares the appearance of the plant with that of the Indian fig and says that the upper surface is of a pale green color and roughened by minute elevated points. He compares the entire receptacle with a mushroom and states that one side of the disc is rounded, while the other shows four semicircular lobes, the whole resembling an inverted goose foot. He adds that each lobe opens longitudinally, and shows minute white "flowers" in the form of tubes. Each tube divides at the apex after a while into four parts which roll back and disclose an oval fruit filled with "seeds" like flour. It is clear from this account that he had female receptacles before him and that he saw the involucre, the pseudoperianth, the capsule, and the spores.

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[39] Traité des Fougères de l'Amér. 143. *pl. 142.* Paris, 1705.

Dillenius took his figure directly from Plumier and did not know the plant itself. He tried to improve the figure, however, by indicating that the upper surface of the thallus was covered over with minute polygons as in related species. Lindberg[41] criticises the figure of Dillenius (and consequently that of Plumier) by stating that an autoicous inflorescence is shown, both male and female receptacles being represented on the thallus. This criticism is undeserved. The receptacles shown are all female, the dorsal surface being represented in some cases and the ventral in others. In his text Dillenius brought out the fact that the receptacles were all the same kind, although he incorrectly interpreted the fruit of Plumier as an anther and the flour-like seeds as pollen, a well-known error which he repeats in his interpretation of the reproductive parts in other bryophytes.

On the basis of Plumier's description and figures it becomes evident that the term "calyx" in the Linnaean diagnosis of *M.*

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[40] Hist. Musc. 531. *pl. 75, f. 5.* Oxford, 1741.

[41] Krit. Gransk. Dillen. Hist. Musc. 45. Helsingfors, 1883.

chenopoda refers to the female receptacle, and it has already been pointed out that a quadrifid female receptacle is not found

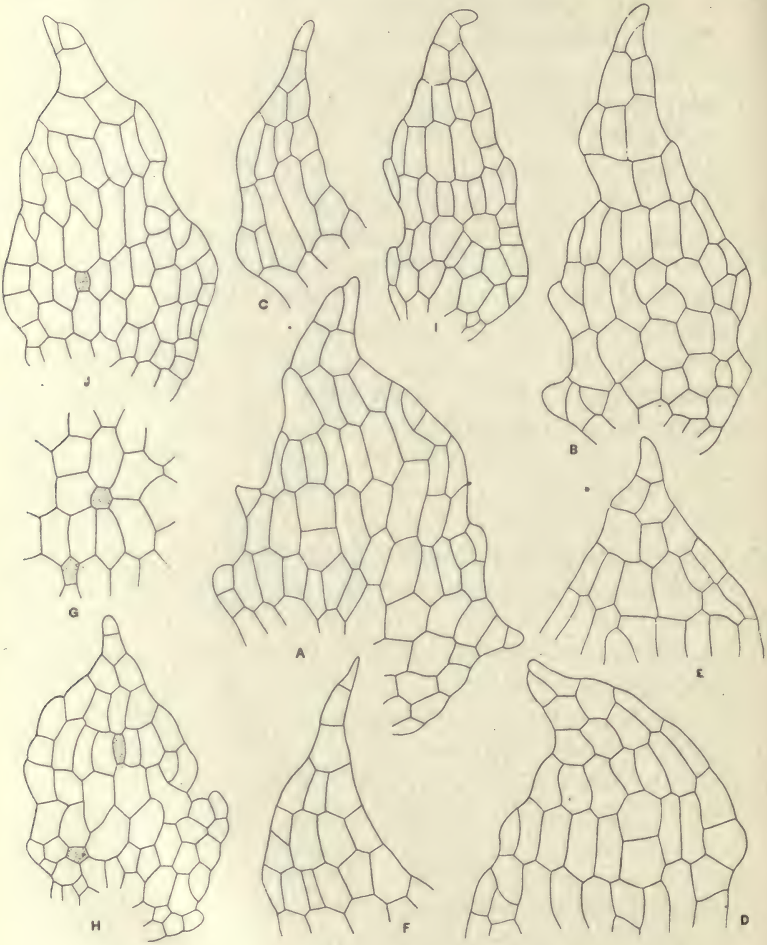

Fig. 16. Marchantia chenopoda L.

Appendages of ventral scales, x 100; G represents the median portion of an appendage with two cells containing oil-bodies. A-C. Cuba, *C. Wright*, in Hep. Cubenses. D, E. Jamaica, *A. W. Evans 258*. F, G. Jamaica, *W. R. Maxon 405*. H, I. Porto Rico, *F. L. Stevens 1844*; J. Guadeloupe, *T. Husnot*, in Pl. des Antilles *196*.

normally in any known American species. Plumier's work indicates further, that the involucres and sporophytes of his plant are situated underneath the lobes, a condition which is likewise unknown among American species, where the involucres and sporophytes invariably alternate with the lobes. Since there are apparently no specimens of Plumier's plant in herbaria, it is clear that *M. chenopoda* L. represents an unidentifiable plant, and the logical course would be to give up the species altogether.

In the literature of the Hepaticae, however, *M. chenopoda* has an established place, and it seems justifiable to interpret it according to the descriptions of later writers. Even Plumier's figure gives us a little help because it shows that he occasionally observed a five-lobed receptacle, although he makes no mention of such a structure in his text. Since most subsequent writers ascribe to the species definitely a five-lobed receptacle, and since the species to which they assign the name is abundant in Martinique, it is quite probable that their *M. chenopoda* is the same as Plumier's plant. Unfortunately their descriptions and figures are not without discrepancies, and it becomes evident that Taylor at least did not distinguish between what is here called *M. chenopoda* and *M. domingensis.*

Apparently Swartz[42] was the first to describe the male receptacles. He states that they are subpeltate, unsymmetrical, palmate-quadrifid, plane and verruculose above (like the thallus), and convex below, the rays or lobes being linear, obtuse, and often unequal, with membranous, undulate margins. He cites no stations for the species although he implies that it occurs in Jamaica. Quadrifid receptacles are sometimes found in *M. domingensis,* but it is probable that Swartz had the true *M. chenopoda* before him, and his description is definitely cited in the Synopsis Hepaticarum.

Schwaegrichen,[43] in 1814, quotes *M. chenopoda* from Africa as well as from America, and F. Weber,[44] the following year, notes a similar extension of range. Neither writer adds anything significant to our knowledge of the species, and it is probable that their citation of African stations is based on incorrect determinations, since all subsequent writers restrict the range of *M. chenopoda* to America.

A few years later Raddi[45] extended the known range of the species into Brazil and stated that it occurred abundantly at the bottom of moist and mossy rocks on the "Montagne d'Estrella." According to his account *M. chenopoda* is distinguished from all the other species of *Marchantia* by its receptacles, which are truncate on one side. He adds that in the male receptacle the upper surface is plane and that the four parts or lobes are unequal in length, and he criticises Plumier for comparing this receptacle with a goose's foot; in his opinion it is more like the foot of a pigeon. Of course this criticism has no weight, since Plumier drew his account entirely from female receptacles. According to Raddi the disc of the female receptacle is strongly convex and either entire or very shortly divided, bearing on the lower surface four fleshy or rib-like swellings, between which are borne the capsules, much as in *M. polymorpha.* He notes further that the upper surface of the thallus is areolate and perforated by white vesicles and that the lower surface is violet except along the margin, where it is green. Although Raddi's specimens have not been available for study it is evident that he had the true *M. chenopoda* before him. Not only is his description unusually clear, but the species has since been collected in other Brazilian localities.

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[42] Fl. Ind. Occid. 1880. Erlangen, 1806.

[43] Hist. Musc. Hepat. Prodr. 32. Leipzig, 1814.

[44] Hist. Musc. Hepat. Prodr. 103. Kiel, 1815.

[45] Mem. Soc. Ital. Modena 19: 44. 1823; 20: *pl. 6a, f. 1, 2.* 1829.

In 1835 Taylor published an account of the Marchantiaceae which had come under his observation. In his description of *M. chenopoda*[46] he comments on the inaccuracies of Plumier's figures and quotes them doubtfully, although it was upon Plumier's work that the species was primarily based. According to Taylor the female receptacle is hemispherical and divided into from eight to ten truncate laciniae, each bearing underneath a single involucre with ciliate or serrulate margins. He notes further that the stalk of the receptacle has two rhizoid-furrows and adds interesting statements about the scales on the vegetative thallus and about the cupules. The scales, in his words, have an entire and broadly ovate base, then a deep constriction at about the middle, and then a broadly ovate and ciliate expansion (the latter being what is now known as the appendage). In the cupules he speaks particularly of the serrate margin. It will be seen at once that Taylor's account of the female receptacle is very different from that of his predecessors, and the specimens in his herbarium show that it was drawn from *M. domin-*

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[46] Trans. Linn. Soc. **17**: 379. *pl. 12, f. 2.* 1835.

gensis. His account of the male receptacle, however, agrees esentially with that of Swartz. Taylor cites *M. chenopoda* from Guadeloupe and St. Vincent as well as from Jamaica and Martinique.

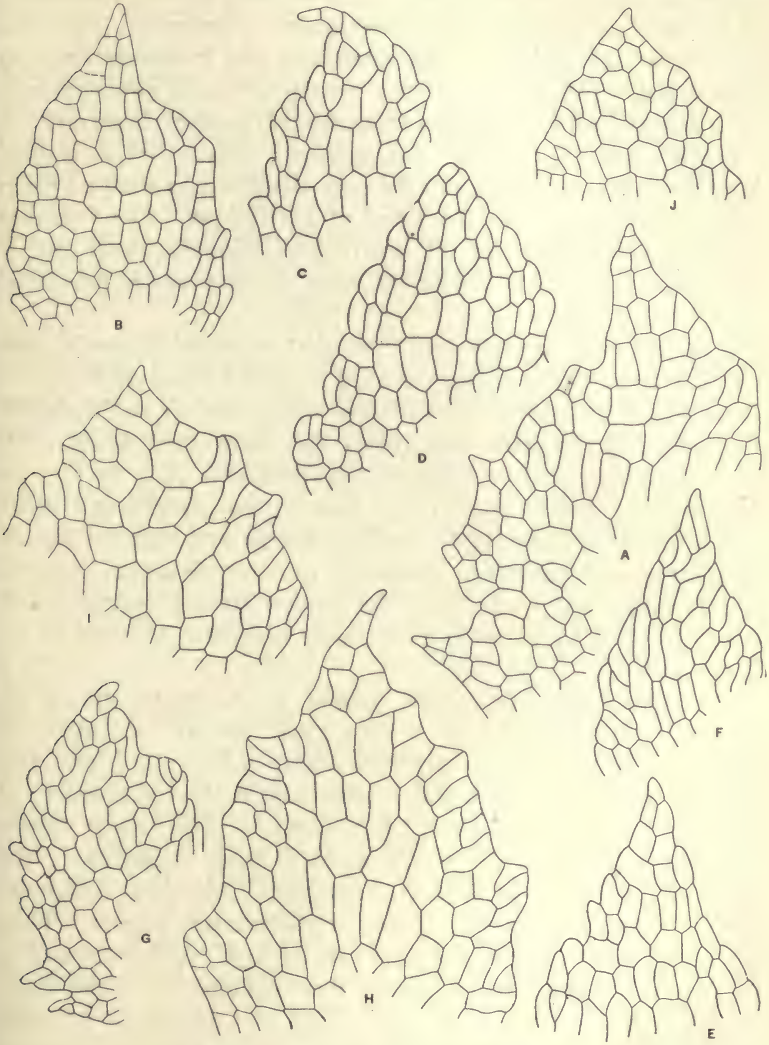

Fig. 17. Marchantia chenopoda L.

Appendages of ventral sçales, x 100. A, B. Venezuela, *Funck & Schlim.* C-E. Brazil, *A. Glaziou 17992.* F, G. Brazil, 1905, *A. Usteri 1.* H-J. Galapagos Islands, *A. Stewart 6876.*

In the Synopsis Hepaticarum emphasis is again laid on the receptacles. The female receptacle is said to be excentric, hemispherical, and about five-lobed, the lobes being obtuse, subcrenate and soon obsolete, with hyaline, denticulate involucres. The male receptacles are said to be unsymmetrical and palmately four- to five-parted. This account of the female receptacle agrees closely with that of Raddi and differs from that of Taylor. Both writers, however, are cited under the species. From Brazil several localities are enumerated, but the only West Indian stations given without question are on the island of Martinique. The Synopsis quotes three synonyms: *M. androgyna* (female plants only), *M. Swartzii,* and *Chlamidium indicum.* These may be considered in order.

Swartz apparently supposed that what he called *M. androgyna* was the same as *M. androgyna* L.,[47] a species based on two citations, the first from Dillenius[48] and the second from Micheli.[49] According to Swartz, who treats the plant very briefly, *M. androgyna* is related to *Reboulia hemisphaerica* (L.) Raddi; he describes the thallus as narrower than in that species and states that the male receptacles are perhaps sessile and that the female receptacles are subentire. Although he cites no actual material it is probable that he drew his description from Jamaican specimens collected by himself, these being definitely referred to by later writers.

Now the Dillenian species quoted by Linnaeus under *M. androgyna* has been the cause of a great deal of confusion. It was based on two entirely different plants, a fact which was first pointed out by Lehmann and Lindenberg in their discussion of the Asiatic *M. linearis* Lehm. & Lindenb.[50] They show clearly that the Dillenian *f. 3B,* which, as they state, is essentially the same as the figure by Micheli, represents *Grimaldia dichotoma* Raddi, a common species of the Mediterranean region. They show further that the Dillenian *f. 3A* and *f. 3C* represent a species of *Marchantia,* and they suppose that this species is the same as the *M. androgyna* of Swartz. The two figures in question were drawn from specimens collected in Jamaica by P. Collinson;

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[47] Sp. Plant. 1138. 1753.

[48] Hist. Musc. 520. *pl. 75, f. 3.* 1741.

[49] Gen. Nov. Plant. 3. *pl. 2, f. 3.* 1729.

[50] Lehmann, Pug. Plant. 4:9. Hamburg, 1832.

f. 3A shows a plant with numerous cupules and female receptacles, while *f. 3C* shows a small forking fragment with cupules

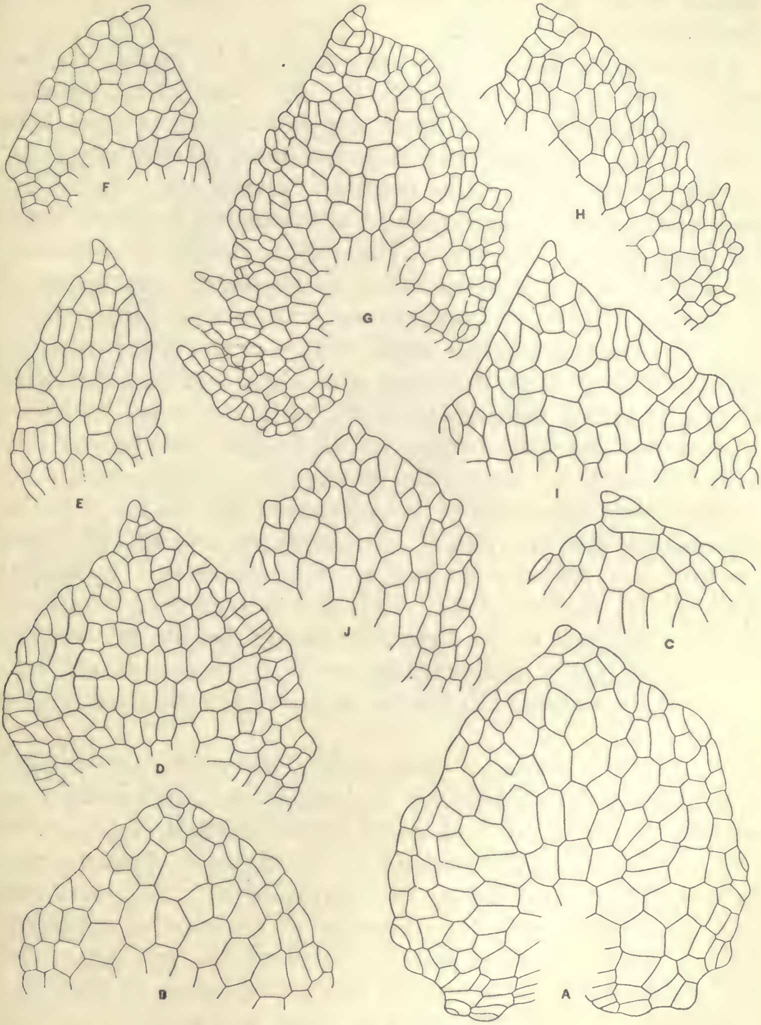

FIG. 18. MARCHANTIA CHENOPODA L.

Appendages of ventral scales, x 100. A-C. Peru, *Cook & Gilbert 755.* D-F. Bolivia, *A. d'Orbigny,* type of *M. peruviana.* G, H. Bolivia, *H. H. Rusby 3004.* I, J. Bolivia, *P. Jay 71.*

only. The receptacles are so strongly convex that they appear conical and resemble those of *Conocephalum conicum* (L.) Dumort. In fact, according to Lehmann and Lindenberg, the

M. androgyna of Weber[51] is actually *Conocephalum conicum,* and the Linnaean name has been applied by other writers to such distinct species as *Preissia quadrata* (Scop.) Corda and *Reboulia hemisphaerica* (L.) Raddi.

Lehmann and Lindenberg's conception of *M. androgyna* Sw. was based on specimens collected by Swartz in Jamaica. Although they considered these specimens identical with those collected by Collinson they did not take up the name *M. androgyna* for the species, probably because the original *M. androgyna* L. was an aggregate. They described it instead under the new name *M. Swartzii.* The female receptacle, according to their account, is unsymmetrical, hemispherical, and subentire or obsoletely lobed, the lower surface and the stalk being villous. They state further that the upper surface of the thallus is green with many large pores bordered with white, and that the lower surface is brown with scales in the median portion; and they suggest that the male receptacles of Swartz's description may have been cupules only. So far as the descriptions go *M. Swartzii* and, consequently, *M. androgyna* Sw. do not differ in any essential respects from *M. chenopoda,* and the authors of the Synopsis are probably correct in citing these two species as synonyms of *M. chenopoda.* This view is supported by a fragmentary specimen in the Taylor herbarium, labeled *M. Swartzii* by Lehmann, which apparently represents *M. chenopoda,* although a positive conclusion can hardly be reached without sectioning the material.

A further difficulty in disentangling the synonymy is, however, encountered. Although Lehmann and Lindenberg considered Swartz's and Collinson's plants identical, this opinion was not shared by the authors of the Synopsis Hepaticarum. In quoting *M. Swartzii* as a synonym of *M. chenopoda* they take pains to exclude the Dillenian *f. 3* altogether, although *f. 3A* and *f. 3C* are definitely quoted by the authors of *M. Swartzii* in citing *M. androgyna* Sw. as a synonym of their species. Fortunately Collinson's material is preserved in the Dillenian herbarium and throws a little light on the subject. It was studied by Lindberg, who reached the conclusion that it represented a distinct and undescribed species. This he proposed as new under the name *M. Dillenii* Lindb. He assigns to the species a delicate pellucid thallus with indistinct areolae but with large pores, the thallus in *M. chenopoda* being thick and opaque with distinct areolae and small pores. He states further that the female receptacles are depressed-semiglobose, excentric and almost entire, the five lobes present being very short, thick,

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[51] Spic. Fl. Goettingen. 168. Gotha, 1778.

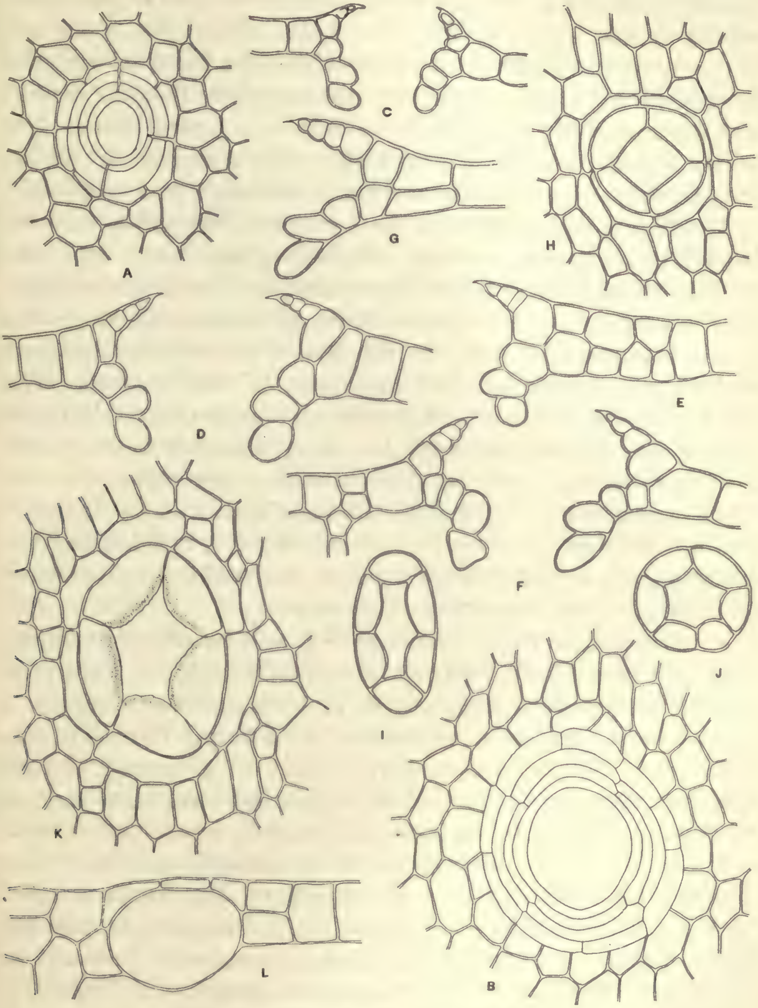

FIG. 19. MARCHANTIA CHENOPODA L.

Epidermal structures of thallus, x 225. A, B. Pores, surface view. C-G. Pores, cross-section. H-K. Pores, inner view. L. Slime cell, cross-section. A, C, H-J. Guatemala, *Cook & Griggs 83*. B, D, E, K, L. Jamaica, *W. R. Maxon 405*. F, G. Peru, *Cook & Gilbert 755*.

semicircular in outline and slightly incurved. The receptacles described are immature and do not therefore yield very satisfactory characters, but Lindberg's description, so far as it goes, would clearly apply to *M. chenopoda.* Even the characters drawn from the thallus easily come within the range of variation to be expected in so multiform a species, where both the texture and the size of the pores differ widely in different plants. The writer would therefore follow Stephani in reducing *M. Dillenii* to synonymy, even in the absence of Lindberg's type material.

The third synonym given in the Synopsis, *Chlamidium indicum,* is nothing but a *nomen nudum.* According to Corda it was based on No. 375 of Sieber's Flora Martinicensis. The Synopsis, however, in citing it as a synonym under *M. chenopoda,* states that it was based on No. 378. In the Mitten herbarium a specimen of No. 378 is preserved under the name *M. martinicensis.* This plant, which probably represents the type of the manuscript species *M. martinicensis* Spreng., is clearly referable to *M. domingensis,* as the authors of the Synopsis have already shown. Their citation of No. 378 under *Chlamidium indicum,* therefore, was probably an error or due to the fact that this number was a mixture; in any case Corda's species, in the absence of adequate publication, deserves no further attention.

If the work of Taylor is excepted it will be seen that writers up to the time of the Synopsis Hepaticarum (1847) were practically unanimous in assigning to *M. chenopoda* a subentire or shortly five-lobed female receptacle and a deeply four-cleft male receptacle. The same thing may be said of subsequent writers. Unfortunately identical or similar characters have been assigned to other species. Aside from *M. Dillenii,* which has already been alluded to, *M. cartilaginea, M. brasiliensis,* and *M. peruviana* may be mentioned in this connection. The first was based on material collected on the island of St. Vincent, no collector being named; the second on Brazilian material collected by Sellow; the third on Bolivian material collected by D'Orbigny.

In *M. cartilaginea* the male receptacles are said by the authors of the species to be slightly convex and borne on very short stalks, while the female receptacles are said to be minute and entire or obsoletely crenulate. Schiffner, who studied the type material, found that the female receptacles were immature and that the so-called male receptacles were nothing more than extremely young female receptacles. The distinctive characters of the species thus break down, and he reduced it to synonymy, retaining it as a var. *cartilaginea* (Lehm. & Lindenb.) Schiffn. under *M. chenopoda.* Stephani quotes it as a simple synonym. Their views are supported by the work of Prescher, who found the distribution of the slime cells the same in *M. cartilaginea* as in *M. chenopoda.*

In *M. brasiliensis* the male receptacle is described as peltate, angled and convex, the central portion being thickened and the margin plane and hyaline; the female receptacle is said to be hemispherical, symmetrical and entire. Here again Schiffner showed that the receptacles in the type specimen were immature and that the distinctive characters drawn from the male receptacles could be duplicated by young male receptacles of *M. chenopoda.* He therefore regards *M. brasiliensis* as synonymous with *M. chenopoda,* a view which the writer is disposed to share. Stephani, in maintaining the validity of the Brazilian plant, dwells on the symmetry of the female receptacle and describes it as strongly convex and very shortly four- to six-lobed. He adds that the entire appendages of the ventral scales can easily be distinguished from the dentate appendages of *M. chenopoda.* Since, however, he assigns both entire and toothed appendages to *M. chenopoda* in his detailed description of that species, and since the receptacles on some of the West Indian specimens referred by him to *M. brasiliensis* are distinctly unsymmetrical, his differential characters can not be regarded as having much significance.

In the original description of *Grimaldia peruviana* the female receptacle is said to be subglobose and crenate while the male receptacle is said to be discoid and sessile. Apparently on account of the characters of the so-called male receptacles Montagne continued to regard the species as a *Grimaldia* even after the authors of the Synopsis had correctly transferred it to *Marchantia.*[52] Probably the sessile structures which Montagne observed were immature female receptacles, but unfortunately the type specimen in his herbarium, a portion of which the writer has been able to examine, is sterile, so that these problematical organs could not be studied. The compound pores, however, and the cupules show conclusively that the species is a *Marchantia,* and the writer would go even further than Stephani did and reduce it to a synonym of *M. chenopoda.* This conclusion is strengthened by the fact that numerous specimens of *M. chenopoda* have been collected in Bolivia by subsequent explorers.

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[52] See Montagne, Sylloge 91. Paris, 1856.

Although a wide range of variability is assigned to *M. chenopoda,* according to the writer's conception of the species, an equally wide range is assigned to *M. domingensis* and an even wider range to *M. polymorpha.* The structures which are perhaps most subject to variation are the epidermal pores, the slime cells, the appendages of the ventral scales and the involucres. The male receptacles and the female receptacles in most respects exhibit features of a more constant character.

In normal and well-developed specimens the pores are unusually large in the middle of the thallus and are only slightly smaller near the margin. In other cases the contrast in size between the median and marginal pores is much more marked; in still other cases even the median pores may be small or medium sized. Corresponding with these differences in size there are differences in the number of cells in the concentric rows around the opening, although the number of such rows is usually seven. The differences in number are found especially in the third and fourth rows of the upper series and in the third row of the inner series. In the fourth row of the outer series the variation is especially great. In small pores as few as four cells may be present, in large pores as many as eighteen cells, and all gradations between these extremes are to be expected. In the third row of each series similar but less marked differences are encountered. In the first and second row of each series four cells are normally present although three, five, six, or even seven cells sometimes occur.

The slime cells vary greatly in number and in distribution. In typical West Indian material they occur abundantly in the epidermis, in the walls of the air-chambers, and in the compact ventral tissue of the thallus. In other specimens they are rare in the epidermis or even absent altogether, although still persistent in the walls of the air-chamber and in the compact tissue; in still other specimens, and this seems to be especially true of material from Mexico, Central America and South America, they are restricted to the compact tissue, where indeed they may be

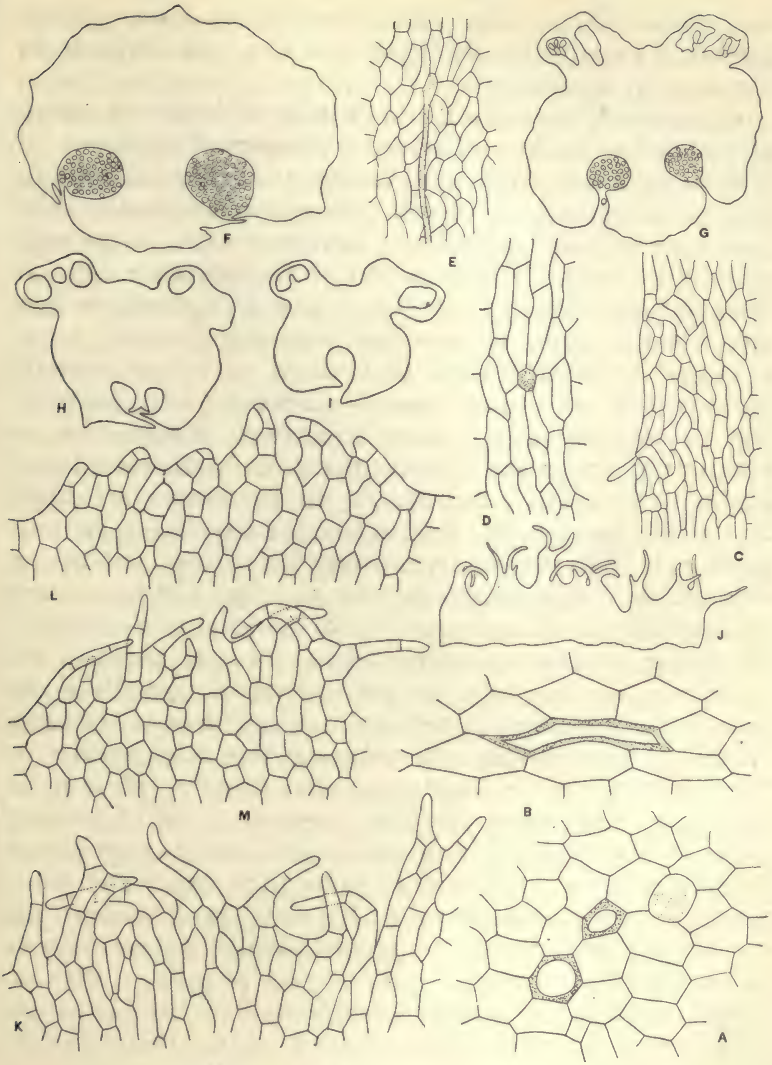

Fig. 20. Marchantia chenopoda L.

Anatomical details. A. Cells from compact ventral tissue in cross-section, including two sclerotic cells and a cell containing oil-bodies, x 100. B. Cells from same tissue in longitudinal section, including a sclerotic cell, x 100. C-E. Cells from basal portions of median scales, x 100. F. Stalk of male receptacle, cross-section, x 50. G-I. Stalks of female receptacles, cross-sections, x 50: G, showing a stalk of average size; H, a slender stalk near the middle; and I, the same slender stalk near the base. J-M. Portions of involucres: J, x 40; L-M, x 100. A-G, J. Jamaica, *A. W. Evans 405, W. R. Maxon 880.* H, I. Panama, *R. S. Williams 1084.* K. Vera Cruz, *Barnes & Land 631.* L. Costa Rica, *Cook & Doyle 301.* M. Bolivia, *R. S. Williams 2143.*

very scarce. Since these different conditions grade into one another, it seems impossible to use them as a basis for the segregation of *M. chenopoda.*

Very striking variations are to be observed in the appendages of the median scales. If the series represented in Figs. 15-19 is examined it will hardly seem possible at first that all can have been taken from a single species. The appendages shown exhibit four more or less distinct types, varying in shape, in the character of the margin, and in the size of the component cells. In the first type, shown by Figs. 15, A-H, and 16, the appendages are narrowly ovate to lanceolate, tapering gradually to an acute or acuminate apex; the margin is either entire or provided with one or more vaguely defined and irregular teeth; and the cells are large, showing no marked differences in size between the median and marginal portions. In the second type, shown in Figs 15, I, and 17, A, the appendages are larger than in the first type and tend to be more acuminate; the margin is more distinctly dentate, although the teeth are still irregular; and the cells are much the same as in the first type, except for the fact that the marginal cells in the basal portion tend to be smaller. In the third type, shown in Fig. 18, A-C, the appendages are broadly ovate and apiculate to abruptly acute; the margin is entire or vaguely and sparingly dentate or crenate toward the base; and the cells are everywhere large, much as in the first type. In the fourth type, shown in Fig. 18, D-J, the appendages have about the same form as in the third type, although they sometimes taper more gradually; but the margin is more irregular, varying from entire to distinctly and rather closely crenate, dentate, or even lobed in the basal portion; and the cells are distinctly smaller, often showing a definite decrease in size between the median and marginal portions. Cells containing oil-bodies are usually absent altogether, but one or two sometimes occur, as shown in Fig. 16, G, H, J. These have not been observed except in the first type of appendage.

Since the various types of appendage are more or less characteristic of definite regions, the first type, for example, being prevalent in the West Indies and the fourth in South America, the writer at first thought that distinct varieties with definite geographical ranges might be distinguished, using the appendicular differences as a basis. It soon became evident, however, that this was hardly possible. Many instances were noted where the range of one type overlapped that of another, and a few cases were observed in which appendages of two distinct types occurred on an individual thallus (FIGS. 15, H, I; 17, A, B). It was impossible, moreover, to associate the differences in the appendages with other differences showing any degree of constancy. In the writer's opinion, therefore, the numerous types of appendage are to be regarded as a further evidence of the great variability of the species.

In the case of the involucres there is again great variability, although the extremes are perhaps less marked than in *M. domingensis.* FIG. 20, L, shows an involucre in which the teeth are scattered, short, and blunt; while in FIG. 20, J, K, M, the involucres shown bear crowded, long and slender teeth. It will be noted that some of the teeth are simple while others are more or less complex. Bifid teeth are especially common and often show widely divergent divisions. The involucres are firmer than in *M. domingensis,* the cell walls being sometimes distinctly thickened and pigmented with yellowish brown.

In North America the only species with which *M. chenopoda* is likely to be confused is *M. domingensis.* The two species are of about the same size, the structure of the epidermal pores is much the same in both, the sclerotic cells in the ventral portion of the thallus show a similar distribution and the male receptacles are very much alike in general appearance. There are, however, striking differences which usually make it possible to distinguish specimens even in the absence of female receptacles. In *M. chenopoda* slime cells can almost always be observed in the thallus and often occur in great abundance; the appendages of the ventral scales are often entire and are never very closely toothed; and the stalk of the male receptacle is destitute of air-chambers. In *M. domingensis* there are no slime cells in the thallus; the appendages of the ventral scales are closely toothed; and the stalk of the male receptacle bears a band of air-chambers.

If female receptacles are present other important differences may be observed. In *M. chenopoda,* the stalk bears two bands of air-chambers; there are normally only five lobes, these being very short; and the involucre is firm in texture, the margin varying from dentate to ciliate or laciniate. In *M. domingensis* the stalk bears a single band of air-chambers, there are usually more than five lobes, these being more or less elongated; and the involucre is very delicate in texture, the margin varying from crenulate to short-ciliate.

The features which distinguish *M. chenopoda* from *M. domingensis* will distinguish it also from the South American *M. papillata.* Another South American species to which it may be related is *M. Beschere1lei,* the appendages and involucres of which might easily come within the range of variability exhibited by *M. chenopoda.* According to our present knowledge, *M. Beschere1lei* is a more delicate species with lower air-chambers and thinner ventral tissue. There is no danger of confusing *M. chenopoda* with any of the other species recognized in the present paper.

Doubtful Species

1. MARCHANTIA SQUAMOSA Raddi; Lehm. & Lindenb. in Lehmann, Pug. Plant. **4**: 12. 1832 (as to the Brazilian plant).

BRAZIL: without definite locality or date, *Raddi.*

Attention has already been called to this species and to its possible aggregate nature (see p. 261). Stephani's description agrees in most respects with *M. paleacea,* and it is possible that Raddi's specimens would now be referred to that species. If this should prove true it would mark an interesting extension of range.

2. MARCHANTIA QUINQUELOBA Nees, Naturg. Europ. Leberm. **4**: 98. 1838.

WEST INDIES: without locality, date, or collector's name.

According to the full description given by Nees von Esenbeck this species is probably a form of *M. domingensis.* In any case there seems to be no reason for attempting to maintain it, since the original specimens (according to Stephani) are poorly developed and valueless.

3. MARCHANTIA PUSILLA Nees & Mont.; G. L. & N. Syn. Hep. 526. 1847.

CHILE: without locality, date, or collector's name.

This species was based on a single very immature specimen and is not represented in the Montagne herbarium. The original description throws little light on its affinities, and Montagne himself apparently had no faith in its validity since he does not mention it in his Sylloge (1856). Stephani therefore seems justified in repudiating it altogether.

4. MARCHANTIA FLABELLATA Hampe, Linnaea **20**: 235. 1847.

VENEZUELA: Galipan, without date, *Moritz 47b* (erroneously ascribed by Hampe to Colombia).

According to the brief original account the species is monoicous, the female receptacles are four-parted, and the male receptacles seven-parted. Although no specimens have been available the writer suspects that *M. flabellata* may represent a synonym of *M. domingensis.* Should this be established it would show that Hampe confused the male and female receptacles and incorrectly assigned a monoicous inflorescence to his species. Unfortunately the question must be left in doubt.

5. MARCHANTIA NOTARISII Lehm. Pug. Plant. **10**: 22. 1857.

CHILE: near Valparaiso, without date, *W. Lehmann.*

Although Stephani at first threw doubt on the validity of this species, suggesting that it was probably synonymous with *M. chenopoda,* he afterwards listed it without question from the Chilean island of Chiloé, citing specimens collected by C. Skottsberg.[53] The original description of *M. Notarisii* is very full but is justly criticised by Gottsche[54] on account of its many ambiguities. It certainly seems to point to *M. chenopoda,* and the writer would refer it provisionally to that species. Unfortunately no specimens of *M. chenopoda* from Chile have been available for study.

SHEFFIELD SCIENTIFIC SCHOOL,
YALE UNIVERSITY.

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[53] Kungl. Sven. Vet.-Akad. Handl. **46**^{9}: 5. 1911.

[54] Bot. Zeit. **16** (Beil.): 28. 1858.

TRANSACTIONS OF THE
CONNECTICUT ACADEMY OF ARTS AND SCIENCES
INCORPORATED A. D. 1799

VOLUME 21, PAGES 315-442 MAY, 1917

A Survey
of
Ancient Peruvian Art

BY

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YALE UNIVERSITY PRESS
NEW HAVEN, CONNECTICUT

1917

THE TUTTLE, MOREHOUSE & TAYLOR COMPANY, NEW HAVEN, CONN.

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I. INTRODUCTION.

It will be the writer's endeavor to present in this paper a brief review of the various types of art to be found in pre-Columbian Peru. The work is the fruit of some four years' study, two years of that period having been devoted to a systematic collection of data in various places and under the direction of various people. As the main purpose will be to establish a basis for the classification of Peruvian art-objects, the study will be confined to those regions where the form and stratigraphic relations of the various art-types that make up the sequence of cultures have been determined with a reasonable degree of precision. The reader is urged carefully to bear in mind the fact that many of the various types are to be found in regions far removed from those here to be specified. But in those regions which are far from the source of an art-type or culture new environmental and psychological conditions almost inevitably exercise an influence which results in profound modifications of the original type. The writer hopes that this paper will help to link certain of the Peruvian arts or cultures with certain types of objects from such regions as Ecuador, Eastern Bolivia, North-western Argentina and Northern Chile. It may even be possible in time to gather material evidence which will conclusively prove the basic unity of all the more advanced types of art in aboriginal America.

In the writer's opinion it is still too early to attempt, with any likelihood of success, to read or interpret the inner significance of the various designs that we shall study. Attempts of this nature have been made by Berthon, (1911), Joyce, (1913b), Posnansky, (1914), and others, but still it seems to be unavoidable under the present limitations of our information that all speculations of this sort should lack an atmosphere of conclusiveness. In this day, with our present incomplete knowledge of these ancient peoples, we should not attempt to read into their exotic designs a set of significances expressed in terms of our own experience. Rather, the investigator should seek painstakingly to analyze the various component parts of each pre-Columbian art or culture, as well in Brazil, Argentina, Chile, Ecuador, Colombia, Panama, and Middle America as in Peru and Bolivia, with a view first to finding out the distribution of each and every element, and ultimately to arriving at some safe and permanently tenable opinion as to the cultural ancestry of each of the cultures that have flourished in the several regions.

The writer also believes that it is time for a serious attempt to be made to construct for the various cultures of pre-Columbian Peruvian art a chronology, supplied with approximate dates, similar to the one already established for the Maya area. In order to arrive at any permanently valuable opinion as to the cultural position and cultural ancestry of these Peruvian art-types, it will be necessary first to know, at least approximately, when and how long they flourished. For many years it has been the fashion for South American archaeologists to look askance at all efforts to construct a chronology. The recent researches of Dr. Uhle, of the late Sir Clements Markham, of Sr. Arturo Posnansky, of the late Dr. Gonzalez de la Rosa and of others have, however, afforded material that seems to justify a formal undertaking of the construction of a date-chronology for the various Peruvian cultures. The author has already made a tentative effort in this direction,[1] and the reception it has met with has encouraged him to pursue the matter further. It is inevitable that discussion of this important matter should finally result in the establishment of a reasonably correct date-chronology. Accordingly, in the hope of bringing that desideratum of Peruvian archaeology nearer, he has ventured to insert at the end of this study a tentative date-chronology of the various art-periods or cultures of early Peru.

The author is greatly indebted to many people for the aid, of various sorts, that they have given him during the preparation of this paper. Chief among these are the following: Dr. Roland B. Dixon, of Harvard University; Dr. Alfred M. Tozzer, of Harvard University; Dr. George F. Eaton, of Yale University; Professor George Grant MacCurdy, of Yale University; Dr. Herbert J. Spinden, of the American Museum of Natural History; Mr. Charles W. Mead, of the American Museum of Natural History; Professor Marshall H. Saville, of the Museum of the American Indian; Mr. Sylvanus Griswold Morley, of the Carnegie Institution; Dr. Aleš Hrdlička, of the United States

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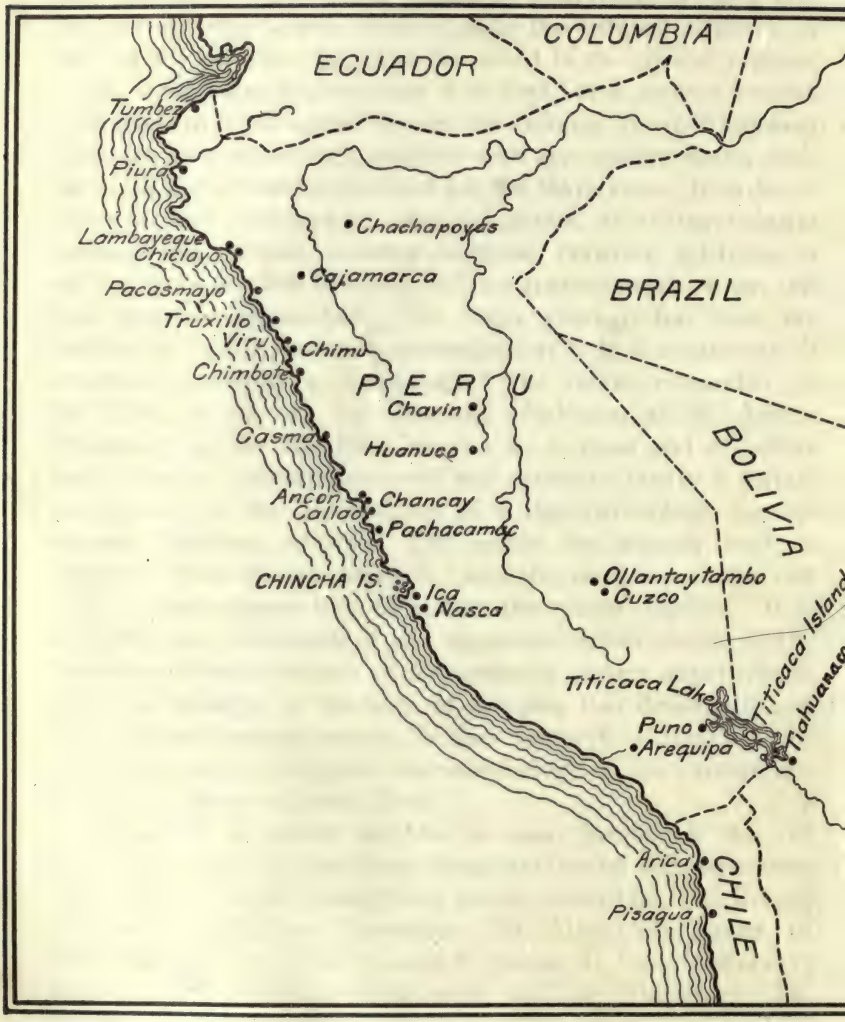
[1] Means, 1917.


COLUMBIA
ECUADOR
Tumbez
Piura
Chachapoyas
Lambayeque
Chiclayo
Cajamarca
Pacasmayo
BRAZIL
Truxillo
Viru
Chimu
Chimbote
P E R U
Chavin
Casma
Huanuco
BOLIVIA
Ancon
Chancay
Callao
Pachacamac
CHINCHA IS.
Ica
Nasca
Ollantaytambo
Cuzco
Titicaca Islan
Titicaca Lake
Tiahuanac
Puno
Arequipa
Arica
CHILE
Pisagua

SKETCH MAP OF PERU

Showing the locations of the chief sites mentioned in the body of the paper.

National Museum; Mr. F. W. Hodge, of the Smithsonian Institution; and, Mr. Thomas A. Joyce, of the British Museum. To all these gentlemen the writer wishes to extend his thanks for their help.

Acknowledgments are also due to the authorities of the Peabody Museum, Cambridge, Mass., to those of the Museum of Fine Arts, Boston, and to those of the American Museum of Natural History for permission to figure various objects in their collections. Mr. Guernsey of the Peabody Museum, Cambridge, was so kind as to help the writer in taking some of the pictures that accompany the paper, and Dr. Denman Waldo Ross was so good as to spend a long time discussing the aesthetic side of the designs on several of the textiles here illustrated.

II. THE CULTURE PERIODS OF PERUVIAN ART.

Before proceeding to a detailed analysis or to any endeavor to coördinate the various cultures, it will be best for us to state as briefly as possible what the periods of culture are and where each is found at its highest development. Appendix II shows their chronological position with respect to one another, and the accompanying map shows the location of the chief sites connected with each of the cultures. It remains for us to summarize the outstanding features of the various types.

1. THE PROTO-CHIMU AND PROTO-NASCA CULTURES.

One may conveniently distinguish between the two subdivisions of this earliest coast culture-period by remembering that the Proto-Chimu flourished all along the northern half of the Peruvian littoral and the Proto-Nasca along the southern half.[1] This subdivision is arbitrary, being based on the form of arts prevailing in the two regions. It is not a wholly satisfactory classification, and it may ultimately have to be modified. For example, it may sometime become desirable to delimit at Pachacamac a style which should be called "Proto-Pachacamac." Our information is, however, too scanty to justify such a course as yet, and it is better for the present to rely upon the classification here offered, which does preserve and emphasize the main lines of differentiation between the major varieties of the earliest coast art.

The art of the region around Chan Chan and Moche[2] in the modern department of Libertad is characterized by features that set it in sharp contrast to other Peruvian art-types. As a rule, the other Peruvian cultures are marked by conventionalization. The Proto-Chimu, on the contrary, is comparatively free from conventionalization and is marked by strong realism, especially in the animal forms, "portraits" and "landscapes." In close association with the elaborate modelling in the round went painted decorations of a type always easy to identify. These paintings were usually in dark reddish brown on a cream-colored slip. In a few cases such colors as light red, orange and buff were used in the vase-paintings. The outlines of the figures are marked by a grace that is unusual in Peruvian art, and in the grouping of the various scenes a striking command of the principles of composition and grouping is displayed. Some of the vase-paintings of this period partake of the nature of genre paintings, and they help us in no slight degree to reconstruct the material culture and customs of the people whom they depict.

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[1] The terms "Proto-Chimu" and "Proto-Nasca" were adopted by Dr. Uhle after he discovered that the objects belonging to them did not belong to the Chimu and Nasca cultures. The name by which the early but highly gifted people called themselves is unknown.

[2] Here again, the nomenclature must be commented upon. The two places just named are near Trujillo and they are the chief sites for Proto-Chimu ware. The name Chimu is used for the same sites at a later period, when the Chimu culture was flourishing. Chimu is derived from the Mochica place-name Chimorr or Chamorr; Moche is the Hispanicised form for Muchik; Chiclayo was formerly Chajaep; Lambayeque is derived from Nampajek. Cf. Middendorf, 1892, p. 64.

It is but right to say here a word or two regarding the reasons that have led Uhle, Joyce and several others to believe that the Proto-Chimu and the Proto-Nasca are the earliest Peruvian arts. The architecture associated with remains of this culture takes the form of massive walls built up of large balls of clay placed in position while still wet and allowed to dry in such a manner that they partly ran together, thereby forming a solid mass of material. Stratigraphic evidence proves that this architecture, of which only a little is left, is the oldest.[3]

Reserving further comments on Proto-Chimu art for a later page, we will now run over the outstanding features of Proto-Nasca art, always bearing in mind the fact that it was probably not only contemporaneous with Proto-Chimu but also closely associated with it on ethnic grounds.

Undoubtedly Proto-Nasca will, in time, serve more truly to explain certain problems than will Proto-Chimu. At the same time, regarded merely as an art, it is not so remarkable. It is more like other Peruvian arts, for reasons that will later appear. Unlike the Proto-Chimu, Proto-Nasca is not characterized by graceful modelling and graceful painting. Rather, it sacrifices both the form of the vessels and the lines of the paintings to a remarkable wealth of coloration. To the novice, it is true, the

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[3] Joyce, 1912, p. 179; Uhle, 1913, pp. 102-103; Means, 1917.

Proto-Nasca vessels appear sombre enough, but the more one studies them the more he becomes impressed with the wonderful richness and variety of their tints. The mere fact that most of them are from the dark side of the color-scale does not impair the effect of subdued richness. If, then, we never find in Proto-Nasca the astonishingly good modelling that excites wonder, and sometimes amusement, at the Proto-Chimu art, the lack is in part made up for by the presence of sumptuous color combinations that may well give valuable hints to modern artists.

It is the opinion of Mr. Joyce that no textiles of this period have survived to the present time.[4] But for reasons to be enlarged upon later, the present writer ventures to hold the contrary opinion on this point.

Though profoundly different, as has been shown, the Proto-Chimu and Proto-Nasca arts have similarities to one another that are quite as significant as their divergences. The similarities are to be found in the subject-matter of the two arts rather than in the details of their execution. In both, the use of headdresses decorated with animal-faces is apparent; in both, the use of various sorts of masks and of eye-painting is noticeable; and in both the centipede-like tail ending in a human face is often found. An important article by Mr. Joyce affords the material for forming these opinions.[5]

2. THE CULTURE KNOWN AS TIAHUANACO I.

The researches of Posnansky, Uhle, Gonzalez de la Rosa and others have established the fact that the remains at and around Tiahuanaco[6] in Bolivia represent two sharply differentiated cultures. Of these, the cruder was the earlier. Posnansky, to whom the subdividing is chiefly to be credited, calls this first and simpler epoch *"Tiahuanaco Primitivo."* The writer, in seeking for a good English equivalent for this term, decided to adopt one that was suggested by Aegean archaeology—hence "Tiahuanaco I," and also "Tiahuanaco II."

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[4] Joyce, 1912, p. 200.

[5] Joyce, 1913b.

[6] Though we shall fall in with modern usage and employ the name Tiahuanaco, it is to be noted that the early name for the place appears to have been Taypicala. This, according to Cobo (IV, p. 65) and Bandelier (1911, pp. 222 and 243), has the meaning of "Stone-in-the-Center (of the Universe)." The word appears to be derived from the "Aymara" (correctly, Colla) terms *taipiri,* center, and *ccala,* worked stone. (Cf. Vocabulario políglota incaico, 1905.)

The architecture of Tiahuanaco I was true megalithic masonry. In building a wall, the early Tiahuanaco people adopted the simple but effective method of setting up at intervals large vertical oblong monoliths. In the edges of these nearest to the next pillar grooves were often cut from the base to the top and into them the builders fitted other blocks of stone by means of which a wall of comparatively small stones was made between the large ones.

In all probability Tiahuanaco I was contemporary, at least in part, with Proto-Chimu and Proto-Nasca. Nevertheless, as will be developed later, there is no trace of the early coast types to be found associated with Tiahuanaco I deposits. It is, in the writer's opinion, impossible to say with accuracy whether or not any pottery or textiles have survived from the Tiahuanaco I period. Posnansky, however, figures two rude stone heads used, apparently, as wall-ornaments, dating from this period.[7]

Even a brief study of Tiahuanaco I reveals the fact that it is totally unlike either of the probably contemporaneous coast-cultures. What, then, is it like? Is it an indigenous and autochthonous culture? The whole trend of modern investigation into the ancient cultures of America discourages belief in the autochthonous nature of the Tiahuanaco I culture. It must, therefore, have been derived from some other region. As it obviously is not connected, even remotely, with any of the other cultures in South America that can possibly have been contemporary with it, save for one possible exception, we must study, however briefly, the strands of evidence that bind it to the group of cultures which constitute that exception. It is, then, suggested that the erectors of the Tiahuanaco I culture were related to, or even members of, the great Arawakan stock of Brazil. This is as yet but a theory. Facts, however, lend it a certain color of truth. These facts we will briefly outline.

Far to the south-east of Lake Titicaca, in the Bolivian province of Santa Cruz, is a site called Samaipata which yields cut rocks very suggestive of the stone-work of Tiahuanaco I. We owe our knowledge of this place to Baron Nordenskjold, and it is his opinion that the remains at Samaipata are associated with Arawakan builders.[8] Archaeology, then, offers a slender thread with which to bind the Tiahuanaco I culture with the Arawakan stock at Samaipata. But this is not all the evidence afforded by archaeology. The island of Marajo, at the mouth of the Amazon, yields evidences of occupation by a people who had a stone technique of a grade similar to that of the Tiahuanaco I people. Finally the characteristic feature of the better sort of Tiahuanaco I stone-carvings is the continuity of the eyebrows and nose so as to form a T-shaped figure.[9] This feature is also found in some of the pottery heads from Marajo in the Peabody Museum, Cambridge, and likewise it is observable on the secondary decorations of the Weeping God figure at Tiahuanaco. (See Plate VII.)

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[7] Posnansky, 1911, p. 33.

Furthermore, linguistics and a study of migrations seem to throw some light on the situation. Haddon indicates roughly that there was a shift of peoples from north-eastern South America toward the Titicaca and Samaipata regions. Chamberlain and others indicate that members of the Arawakan linguistic stock are to be found far over toward the Andes at the latitude of Lake Titicaca.[10]

On the whole, then, there is a certain justification for suggesting that the first high-cultured dwellers at Tiahuanaco were derived from stock belonging to the eastern half of the continent. The reader is reminded, however, that this whole point is in an embryonic state of discussion. Only long and systematic work will definitely establish the Arawakan derivation of the Tiahuanaco I people and their culture.

3. THE CULTURE CALLED TIAHUANACO II.

If Tiahuanaco I was probably contemporary with the Proto-Chimu and Proto-Nasca cultures of the coast, Tiahuanaco II is no less probably derived, at least in part, from the latter of those two coast cultures. This will be enlarged upon later on.

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[8] Nordenskjold, 1902, 1906, 1906b.

[9] See Posnansky, 1914, Plate XXXX.

[10] Haddon, 1912; Chamberlain, 1913b, p. 474 ff.

There can be but little doubt that the culture which we call Tiahuanaco II was the most highly developed in South America. It even rivals the Maya culture of the "Old Empire" cities in the southern part of Yucatan.

It may be true that it is dangerous to measure the actual spread of a culture by the boundaries of the territory within which remains of its distinctive products are to be found. *Political* affinities, of course, cannot be determined by any such evidence; but, nevertheless, the fact that Tiahuanaca II objects are found from Colombia to Argentina is a proof that the *cultural* dominance of Tiahuanaco II was exceedingly widespread.

As we have seen, there was a shift, in the transition from Proto-Chimu to Proto-Nasca, from a light-toned art enriched by good modelling to a dark-toned art characterized by poor and slight modelling. For reasons to be brought out later it is but natural that we should find the characteristics of Proto-Nasca art carried on to their logical development in the art of Tiahuanaco II. This natural state of affairs is found to exist.

In Plate VII we see an important portion of the largest monolithic gateway at Tiahuanaco. It may safely be said to be an epitome of Tiahuanaco II art. Its characteristics, from our point of view, may be listed thus: (1) A headdress decorated with ray-like tabs. (2) Square-headed chief figure with round eyes from which run down the "tears." (3) A short stout body with a necklace and a short, skirt-like garment held up by bands that run over the shoulders. (4) Four-digit hands holding ceremonial staves. All these elements will, of course, be analyzed in full later on.

In general terms, one may say that Tiahuanaco II art, whether in stone, pottery, textiles or bronze, is the most elaborate we have yet seen. Birds with human bodies, pumas, fishes and other animal forms combine with almost innumerable conventionalized decorations to form an art of surpassing complexity. In the pottery of this period we find a sacrifice of coloration to a perfection of the almost glaze-like finish. In other cases, however, Tiahuanaco II pottery has neither rich coloration nor fine finish. Red and black are the chief colors employed, though sometimes white is found as well. The textiles, however, naturally preserve a wider range of tint. Unfortunately, most of those that have survived into our day come from the coast and so do not represent Tiahuanaco art as having the austere elaborateness that marks it in the highlands. Indeed, this characteristic of the textiles of Tiahuanaco II on the coast may have been found also on the pottery from that region and period. It may well have been a heritage from the rich-tinted Proto-Nasca period.

In many ways the civilization of the Tiahuanaco II "Empire" was the highest that ever flourished in pre-Columbian America. As has been said, it may not have been wholly a political "empire," but it is probable that all through the wide area where Tiahuanaco II objects are found there was a constant interchange of ideas and merchandise. This opinion is borne out by the fact that all the chief edifices at Tiahuanaco itself were of massive stone. On the coast, however, where the earlier people (Proto-Chimu and Proto-Nasca) had used adobe and where stone was not easily obtainable, the Tiahuanaco II people adapted the old clay-ball architecture of their predecessors to their needs by modifying the clay balls into real bricks of sun-dried clay. These bricks, or adobes, ranged in size from seven or eight inches in length to three feet or more. Different sized adobes were used for different needs, just as different sized stones were used in the similar circumstances.

4. THE RED-WHITE-BLACK AND EPIGONAL CULTURES.

In general, it may be said that the red-white-black ware followed the Tiahuanaco II period of the north part of the coast, and that "epigonal" ware was distinctive of the southern part of the coast. Both were the successors of Tiahuanaco II, and both, especially the "epigonal," were influenced by it and by the earliest cultures. In this period the architecture remained much the same as in the preceding one, and the only radical difference that exists between Proto-Chimu and red-white-black on the one hand and Proto-Nasca or Tiahuanaco II and "epigonal" on the other is that neither of the later types were as technically admirable as the earlier ones.

Leaving for a later page the discussion of the details of this art-period, we will mention the only hint we possess of who the makers of the red-white-black ware were. It seems that the dynasty of Chimu was preceded in a portion of the north part of the coast by another dynasty called Naymlap whose chief seat was Lambayeque.[11] The Naymlap people came from the north by sea, and they built up a state that was apparently conquered by the chief Chimu. All this, however, is as yet mere unsubstantiated theory.

5. THE CHIMU AND NASCA CULTURES.

With this period one begins to get some hint of the political, social and ethnological conditions under which the people lived. Several authors, ancient as well as modern, give valuable information on this head.[12]

All that, interesting though it is, lies without the scope of the present paper. We will therefore content ourselves with observing that in the period which we are now considering the northern portion of the coast, from Tumbez down to Casma, was under the sway of a great chief known to the Incas as Chimu Capac (Great Chimu). The valleys of Rimac, Pachacamac and Chancay were ruled by another great chief called Cuismancu. Runahuanac, Huarcu, Mala and Chilca were ruled by Chuquimancu. Ica and Pisco (and perhaps Nasca) were ruled by the powerful chief Chincha.

The different valleys being so divided from one another in political ways, it is not surprising that we find considerable local differences in art-types as well. Yet we have no grounds for assuming that the coast peoples were not rather closely related on ethnic lines, which explains, no doubt, certain widespread resemblances between the arts of the various regions.[13]

The architecture of this period, perhaps because of the influence of Tiahuanaco II, was very elaborate. Adobe continued to be the chief material, but it was used in more complex ways. Palaces, workshops, reservoirs, aqueducts and many other elaborate works were constructed. The custom of using stucco reliefs on walls became fairly common.[14]

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[11] See Markham, 1912, p. 222; Joyce, 1912, pp. 50 ff.; Beuchat, 1912, pp. 584 ff.; Means, 1917; Garcia Rosell, 1903.

[12] See Cieza, 1864, pp. 233 ff., 1883, pp. 185-193; Garcilasso, II, pp. 181-201; Cobo, 1892, IV, pp. 47-54; Markham, 1912, pp. 200-239; Joyce, 1912, pp. 95 ff.; Garcia Rosell, 1903; Arriaga, 1621.

[13] Hrdlička, 1914, pp. 41 ff., and pp. 52 ff.

[14] Middendorf, 1894-95, II, p. 375; Squier, 1877, pp. 136 ff., 150 ff.; Joyce, 1912, pp. 150 ff.

The artifacts of the period under consideration are chiefly in the form of pottery, albeit textiles are also present to a considerable extent. In general, designs on Nasca textiles may be said to take the form of rather simple, but by no means crude, geometric patterns, perhaps with a slight and conventionalized zoomorphic element, such as those in Uhle, 1913b, Figures 3, 7, and 9. On both pottery and textiles of this region and period the colors were much less numerous and splendid than they were in either the Proto-Nasca period or the Tiahuanaco II period. If, then, Nasca art can be said to preserve an echo of the color traditions of its predecessors, and also of their geometric tendencies, (for some of its chief motifs are derived directly from some of their minor ornamental details), so, in no less degree, can the black modelled ware of the Chimu period be said to preserve the realistic tendencies, as well as some of the decorative motifs, of Proto-Chimu art.

6. THE COLLA-CHULPA CULTURE.

The name chosen to distinguish this period is made up of the two names applied by various writers to the people who lived in it.[15]

As the general culture-level was so low, it is but natural that the pottery of this period should be poor. The best collection of it is that made by Bandelier which is now to be seen in the American Museum of Natural History, New York City. It has not seemed to the writer to be worth while to include pictures of this type, so a description will be given in order that some idea of the type may be formed.

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[15] Joyce, 1912, p. 75, Markham, 1912, p. 186, Beuchat, 1912, p. 576, and others use the term *Collas*. Bandelier, 1910, pp. 184 ff., calls them *Chullpa*. (The double ll is without justification.) The term *Aymará,* often applied to these people by writers, and even by such first-rank authorities as Bandelier (1910, pp. 63 *et passim*), Hrdlička (1911, p. 1) and others, is entirely misleading. The people who lived in the Titicaca basin between the time of Tiahuanaco II and the Inca conquests were the Collas. It was they who produced the culture here to be discussed and who built the chulpas or burial-towers. The name Aymará was first given to these people by the Jesuits of Juliaca some time before 1590, and it was established in usage by Bertonio (1603) and Torres Rubio (1616). All this has been emphasized by Markham (1912, p. 192) and Joyce (1912, p. 75) but it cannot be dwelt upon too often. The mistake of the Jesuits is accounted for by the fact that the Aymarás, whose original home was between Cuzco and the continental divide, were conquered by the Inca Pachacutec and were moved, by him, to Lake Titicaca as *mitimaes.* (Sarmiento, 1907, p. 108; Garcilasso, II, p. 50.)

In the Bandelier collection are a number of jars from Sillustani, a place that was probably the site of important activities during the Colla-Chulpa period.[16] The vessels are made in two styles. One is a small type of vessel of white clay, rather coarse and undecorated; the other type is made up of red ware, also coarse, with designs in black upon it. Other specimens, doubtless from this period, are a class of rather coarse and clumsy bowls with design suggestive of the "epigonal" of the coast. (See Bandelier, 1910, Plate XXI.) Coarse bottles of dark red clay, sometimes decorated with black lines, and gray bottles with incised rectilinear spirals seem to exhaust the artistic repertory of the Colla-Chulpa potter. In bronze work, however, the Colla-Chulpa folk were much more advanced, as is evidenced by the archaeology of the region where the chulpas abound.[17]

It would be a mistake to close our study of this intermediate period without a brief study of the unusual architectural form that peculiarly marks it. The *chulpas* are strictly speaking stone towers, either circular or rectangular in plan. They vary greatly in size and neither their use nor their distribution is yet definitely settled. Even with our present limited information, however, it is possible to distinguish several types of chulpa. Sir Clements Markham long ago suggested that the cruder types might have been adopted later by the Incas who evolved from them the less crude types.[18] Without formally accepting this theory, we will discuss each of the types in the order of their *apparent* antiquity, bearing in mind the possibility that appearances *may* be deceptive. The most primitive form of chulpa, then, is that which is found at Quellenata and Ullulloma.[19] The former of these places is close to the north-western end of Lake Titicaca; the latter is about fifty miles north-west of there. Primitive chulpas also occur at

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[16] Bandelier, 1910, pp. 184 ff.; Bandelier, 1905; Squier, 1877, pp. 376-384; Markham, 1912, pp. 186 ff.

[17] Beuchat, 1912, pp. 580 ff.; Nordenskjold, 1906, 1906b.

[18] Markham, 1871, p. 308.

[19] Squier, 1877, pp. 386 ff.

Sillustani, on the west of the northern end of Lake Titicaca, at Kalaki on the eastern shore, and at Coni and Curahuara far to the south-east of the Lake.[20] It will be seen that this type of chulpa was built over a wide area. Speaking in general terms, it is a round stone tower which is smaller at the bottom than at the top. The stones are uncut, and had some binding material. In some cases the roof is flat; in others it is a truncated cone. Stone was the sole material. The edifices of this type belong to the fourth period of Posnansky's culture-sequence. He calls it the "epoch of edifices of adobe and pirca (uncut stone)."[21] This reckoning would place the style just prior to Inca times. The second type was, in outline, the same as the first. It tended, however, to be larger, and the stone was carefully cut so as to make a beautifully built wall. Sillustani, Coni and Kalaki are the chief sites for this type. The third and final type was somewhat the same as type two in regard to the material, but it differed from the other two in being rectangular in plan and very large, sometimes as much as thirty feet in height.[22] Unlike the other two types, which had but one interior chamber, this third type sometimes had two chambers, one above the other. It is to be noted that this type is the only one which occurs outside the Titicaca drainage. There is an interesting example of it at Palca, not far from Tacna in northern Chile.[23]

The question of who the Collas really were is a complex and important one. In considering it one must not forget the presence in the Titicaca basin of another and much lower-cultured stock called Urus or Uros. The general trend of the evidence at hand regarding the Urus shows them to be very low-cultured and quite widely distributed. In fact, their area at the time we are considering extended from Titicaca down to Lake Poopo or Aullagas. It may have extended westward to the Chilean coast. The stock was probably an old one. Boman (1908, I, p. 72) suggests that the Urus were vestiges of the earliest pre-Yunca (i. e. pre-Proto-Chimu) population, and that they were driven south and east by the earliest high-cultured invaders. At the same time, we must remember that, in the same general area, the higher-cultured Collas had a culture which was similar to that found in the north-western parts of Argentina. It might be suggested that one of these racial elements represents the inhabitants of the Tiahuanaco II "empire" and that the other represents the invading race which may have helped to bring it to a close. But which is which, and if this is the truth, we cannot surely tell.[24] To some it may seem more satisfactory to assume that there were two strata of population—Collas and Uros—who were mutually aloof. Such a state of affairs has been known to exist in Asia, Oceania and elsewhere. Certainly the Titicaca basin is spacious enough to permit isolated groups of Uros to dwell wholly apart from the surrounding Colla communities.

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[20] Bandelier, 1910, pp. 243 ff., 1910, p. 186; von Tschudi, 1868, V, pp. 202 ff.

[21] Posnansky, 1911b, p. 17.

[22] Squier, 1877, pp. 352 ff., 372 ff.

[23] Squier, 1877, pp. 242 ff.

The whole question of the distribution of the chulpa-type of building is a highly important one, in all probability. The type has prototypes over a very large area. The writer has found it in the region of Ollantaytambo. It exists in the neighborhood of Oroya (see Dr. William C. Farrabee's photographs in the Peabody Museum) and something strikingly like it is found at Cuelap and other sites in the region of Chachapoyas. (Bandelier, 1907.) Again, in the district of Huarochirí, buildings of the chulpa type are found in the middle portion of Peru and fairly near the coast. (Hrdlička, 1914, Plates 3 and 4.) At present the evidence is rather tantalizing than illuminating. One can only say that over this wide area there seems to have been a material culture of the same general level as that of the Colla in immediately pre-Inca times.

7. EARLY INCA CULTURE.

As has been said before, the culture of the mountain regions away from the sea suffered a general and marked subsidence after the Tiahuanaco II period, a subsidence which we have studied under the name of Colla-Chulpa culture. Therefore, when that gens of the valley of Cuzco which later became the Inca dynasty began to raise its own culture-level and that of the surrounding tribes it had not much artistic tradition on which to establish its own art.[25]

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[24] Cf. Chamberlain, 1910, 1910b, 1911, 1913; Boman, 1908; Garcilasso, II, pp. 223-227.

[25] It seems to the writer that the character of the Inca gens has never been properly appreciated, save, in a measure, by the late Sir Clements Markham. According to Sarmiento (1907, pp. 37 ff.), the people in imme-

Difficult though it sometimes is to distinguish between early and late Inca pottery forms, it is, in the writer's opinion, possible to establish a series of vessels from Machu Picchu[26] that will serve to throw some light upon the development of the most typical form of Inca (or Cuzco) pottery—the aryballus. But the reader should take care to bear in mind that the simpler and cruder forms, forms probably longer in use than the more advanced types, undoubtedly continued to be employed by the very late generations of the Incas' subjects as cooking utensils, etc., while the finer products of the potter were reserved for less heavy work. In spite of this, however, the fact remains that the cruder types, being very like the Colla-Chulpa pottery both in form and in material, were probably older types of vessels than the decorated and graceful forms. The reader is urged, then,

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diately pre-Inca times lived without governmental organization of any sort except that in times of danger a military officer with the title of *Sinchi* was chosen. Besides this, in the opinion of Sir Clements Markham (1912, pp. 159 ff.), there was a social organization based upon the family at the head of which stood the *puric*. Several *purics* combined together into an *ayllu* or lineage. This system was carefully studied by Sir Clements Markham, and we have to thank him for showing us what the social conditions in the highlands before the rise of the Inca *ayllu* were. He did not, however, lay stress upon the historical significance of all this. Sarmiento (1907, pp. 40 ff.) tells us that just before the rise of the Incas, there were, in the valley of Cuzco, six *ayllus* in the possession of the region. Three of these, whose names he did not know, were native; three others, the Alcabisa, the Copalimayta, and the Culunchima, came and settled amicably among them. Later on, the Inca also came from not far off and settled at Cuzco. Strife arose between them and the other families which was not finally subdued for some time. Like the heads of all the other *ayllus,* the chief of the Incas bore the title *sinchi*. Hence we get the name Sinchi Rocca, borne by the first historic Inca.

[26] The name "Machu Picchu" is the one given to this site by Dr. Hiram Bingham, who visited it for the first time in 1911. Although the name is not a wholly satisfactory one, it has been thought best to continue its use here because the site has already become well known under it, and because the name Vilcabamba-the-Old (or Vilcabamba viejo) is rather clumsy, a fault which outweighs its greater historical accuracy. In any case, "Machu Picchu" is preferable to the "Matcho Picho," "Macho Piccho" and so on of such writers as Sartiges, 1851, and Wiener, 1880. The phrase *machu pichu* means "old ridge." The late Sir Clements Markham was of the opinion that the *cc* in the name "Machu Picchu" was a mistake. The name is pronounced Pi-chu, not Pic-chu.

to turn his attention to Dr. George F. Eaton's work on the osteological material from Machu Picchu, and to Dr. Hiram Bingham's "Types of Machu Picchu Pottery."[27] In the first place, we are justified in assuming that the delicately formed, well decorated aryballus of the type shown in our Plate XIII was one of the ultimate forms of Cuzco pottery by the fact that it is this type of vessel that is found most widespread, even in regions like Ecuador, Chile and Argentina where Inca influence did not arrive until very late. It will be our task therefore to show in a series the forms that led up to the final aryballus type. This we will now do. The series proposed by the writer is made up as follows:

First Step.

Rough, undecorated ware. Eaton, Plate XIV, Figure 4. Bingham, Fig. 48, No. 7a. Also see Eaton, Plate IX, Figs. 3 and 4 for a variation of the First Step.

Second Step.

Slightly finer ware, sometimes decorated in colors, with enlarged handles and more pronounced neck. Eaton, Plate XIII, Figs. 1 and 2. Bingham, Fig. 47, No. 6a.

Third Step.

Still coarse ware with more pronounced neck. Sometimes decorated(?). Handles small and moved down from the lip. Eaton, Plate XIV, Fig. 5. Bingham, Fig. 48, No. 8a.

Fourth Step.

The well-known type of Cuzco Aryballus. Our Plate XIII. Eaton, Plates V, VII, & X. Bamps, 1879. Oyarzún, 1910. Joyce, 1912, Plate XXII, and p. 229.

It will, perhaps, be well to say again that the particular crude specimens above referred to are not, in all likelihood, themselves older than the more refined specimens. For example, in the same grave with the specimen representative of the first step, Dr. Eaton found skeletal remains of the coast type, which implies that the pot belonged to people who had come up from the coast at some time subsequent to the Inca conquest of the littoral.[28] The point of the series presented, however, does not dwell in the antiquity of the *specimens,* but rather in the relative antiquity of the *types of form.*

To sum up, then, our impressions of the early Inca culture we will say that the time in which the Inca *ayllu* was extending its ascendancy over the other Quichua tribes in the neighborhood of Cuzco, the people of the Cuzco region were gradually evolving from the simple pottery-types of their ancestors a new kind of pottery which was to find its fullest florescence under the last five Inca rulers. Because of the lack of detailed knowledge of the early Inca period, we shall not touch upon that culture again in this paper.

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[27] Eaton, 1916, Plates V-XIV; Bingham, 1915b, entire.

[28] Eaton, 1916, p. 45 ff.

8. THE INCA CULTURE AT ITS HEIGHT.

As the Inca culture is the nearest to us historically it is but natural that we should know more about it than we do of the rest. It is even possible to draw up a fairly complete and reliable history of the Inca dynasty, especially of the last six rulers. For a long time it was customary to assign all evidences of pre-Columbian culture in Peru to the Incas; indeed, that is still done, unfortunately, by some writers. They disregard the growing evidence which points more and more clearly to the inferiority in many respects of the Incas to their various predecessors.

The Incas were, nevertheless, wonderful people. They had a real genius for government and their state was the only truly socialistic monarchy that has ever existed. The individual was nothing; the state, that is the Inca himself and his blood-relatives, was supreme in all things. It is not surprising that, in a state like this, strongly centralized, autocratic, theocratic and all-controlling, the art of outlying regions should all tend to approximate that of the capital of the dominion ruled by the Inca from Cuzco. This is, in the writer's opinion, the psychological explanation of the fact that from Quito to Chile and from the Pacific to the Brazilian wilderness, vessels, architecture, weapons, textiles and language all conform, with varying degrees of closeness, to the fashion or example set by the people of Cuzco. Typical Cuzco pottery is found wherever the Inca conquerors penetrated; Quichua dialects prevail to-day over the same areas.

As far as *shape* is concerned, the vessels made by the subjects of the Incas of the later generations are the most graceful in Peru. The aryballus, the beaker, the bowl and many other forms, all very attractive, are found. Dr. Hiram Bingham, whose trips to Peru have resulted in the publication of many valuable pictures of Inca sites and products, has given a résumé of the commoner Inca forms.[29] Machu Picchu, the site from which most of these objects come, was thought by Dr. Bingham to be Tampu Tocco, the "cradle" of the Incas. He also presented convincing evidence pointing to the fact that the city was Vilcabamba-the-Old, a celebrated sacerdotal establishment of the Incas in post-conquest times.[30] It should be noted that the work of Dr. Eaton has left very little doubt as to the modernity of this site as compared with that of Tiahuanaco or Chimu. Every class of object found there, every bit of osteological evidence, points to the fact that Machu Picchu was built at some time after the Incas had conquered the coast of Peru and had had time enough to be affected by the influence of coast art.[31] We are indebted, therefore, to the Yale Expedition for the unveiling of a city which, though known to travelers for many years, has never, until recently, been photographed and adequately described. Machu Picchu is undoubtedly the most valuable site in the Cuzco region, for it presents an epitome of all that the Incas knew of art, architecture and engineering at a time when they were at the zenith of their power. We shall, therefore, consider Machu Picchu pottery to be representative of all that the pottery of late Inca Peru was, and we shall study it accordingly, assuming Machu Picchu pottery to be all that Cuzco pottery was in the last part of the Inca period.

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[29] Bingham, 1915b.

The characteristics, then, of Inca pottery as shown by the Machu Picchu collections, are: (1) The predominance of almost classically graceful shapes such as aryballi, pelikai, dishes, bowls and so on. (2) The widespread and often-repeated use of certain fixed and definite geometric decorations. (3) The general scarcity of anthropomorphic decoration. (4) The occasional association of perfectly recognizable Cuzco shapes and decorations with some element introduced from the coast, such as modelled anthropomorphic handles on dishes or life-like butterflies painted on the bottoms of shallow bowls. (5) Cuzco pottery is, in general, lighter in tone than either Tiahuanaco II or Proto-Nasca. As has been said, pottery of a pure Cuzco type is found from Ecuador to Chile.[32] In all this huge area a surprising steadfastness to the original type is to be observed; but, nevertheless, local sub-types do develop in several cases. Such a one is the Inca style on the islands of Titicaca and Coati in Lake Titicaca. There, though still perfectly definitely related to the usual Cuzco types, the pottery is marked by a tendency to break the decorated surface up into very small geometric areas which are made prominent by the contrasting of dark brown with cream color. This is noticeable in the collections from Titicaca now in the American Museum of Natural History, New York.

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[30] Bingham, 1915, pp. 180 ff.

[31] Cf. Bingham, 1913, 1915, 1915b, 1916; Eaton, 1916; Dorsey, 1901, Pl. XLII; Joyce, 1912, p. 198; Uhle, 1903; Hrdlička, 1916c.

[32] Cf. Bamps, 1879, Atlas; Saville, 1907-1910; Rivet, 1912; Oyarzun, 1910.

As is usually the case, the textiles, though showing affinities of design with the pottery, are richer in the variety of their colors. The Incas' subjects were as good weavers as any in aboriginal Peru. That their art was strong and flourishing at the time of the Spanish conquest is proved by the fact that shortly after the conquest there were produced some of the finest specimens of Inca tapestry that we have.

Unlike their predecessors, the people of Tiahuanaco II, the Incas' subjects, though admirable architects, did not decorate their buildings with any great amount of carving. To replace the decoration applied to the walls of huge stones by the carvings of Tiahuanaco II type, the subjects of the Incas evolved a new type of architecture. It takes the form of exquisite walls made of reasonably large stones laid in courses of quite astonishing accuracy. Often the lowest course would be made of stones of say a foot high; the next course would be slightly lower, and so on to the top. The effect of this technique was a wall of wonderful symmetry and beauty. Such a wall needed no carving to make it sightly. Dr. Bingham gives an excellent picture of this late Inca type of wall.[33]

This Inca culture, then, was the last of the long series of pre-Columbian Peruvian cultures. With our brief review of the chief features of those cultures thus brought to a conclusion, we will now turn to a detailed analysis of the Plates which accompany this paper and which have been chosen with a view to setting forth the more prominent characteristics of the principal culture-types.

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[33] Bingham, 1913, p. 488.

III. ANALYSES OF THE ARTS OR CULTURES.

1. A CRITICAL ANALYSIS OF PROTO-CHIMU AND PROTO-NASCA ART.

Aside from examining the Plates that accompany this paper, the reader is urged to examine those that are to be found in the works referred to in the footnote.[1] It is hoped, however, that the examples of the two very early types of art herewith presented will prove sufficient material for those who cannot seek further for it.

Plate I shows five specimens of Proto-Chimu art, all to be found in the Peabody Museum at Cambridge, Mass. It will readily be observed that two characteristics hold true for all the specimens given; these are: light coloration, and grace of line. In Figures 1-4, the chief source of admiration on the student's part is the wonderfully life-like modelling. Figures 1 and 2 are especially remarkable in this respect. In Figure 1 we see a man attacking a deer with a massive club. His small dog looks on. With the exception of the deer's body and the man's feet the modelling is far better than that in some of the early Egyptian and Cretan figures. The man's clothes seem to consist of a loose-fitting shirt with sleeves and of a hat or helmet adorned with two rosette-like protuberances and a sort of frontal ridge. From the helmet proper a strip of cloth runs down to and under the man's chin. The nose of the man is large and somewhat of the Semitic type. The chin is somewhat receding. The dog on this vase is probably one of those which the early people kept for use in the chase.[2] On the body of the vase is to be seen a composition that is very typical of Proto-Chimu art. It is painted in dark brown on the white slip of the vase and, like the modelled group above, represents a hunting scene. It should be noted that the costumes of the figures in the painted part of the decoration differ considerably from that of the modelled man.

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[1] Cf. Uhle, 1908, 1910, 1912, 1913, 1913b, 1914; cf. Reiss und Stubel, 1880-87; Baessler, 1902-03; Putnam, 1914; Theresa von Bayern, 1907; Joyce, 1912, 1913b; Beuchat, 1912; Mead, 1915; Squier, 1877; Berthon, 1911; Rivero and von Tschudi, 1851; and many other works.

[2] Cf. Joyce, 1912, p. 125.

The former, for example, have the black "stockings" that are so frequently seen in Proto-Chimu vase-paintings; also, the painted men have a very different headdress from the modelled man. But most important of all is the fact that the painted men appear to be either wearing masks or else to be adorned with face-paint. Indeed, if the latter is the case, the "stockings," "knee-caps" and "sleeves" must be assumed to be nothing less than body-painting. From all of these elements of decoration the modelled man is entirely free. Figure 2 is another type of modelled vase from the Proto-Chimu period. It shows a personage, apparently masked to represent a fox or some such animal, sitting facing a semicircle of five foxes. The personage's headdress, though different from that in Figure 1, is, nevertheless of the same general type. The striking features about this figure are the *headdress* and the *fangs,* to both of which we shall refer later. Again, the back of the middle fox is adorned with a design which Posnansky calls *signo escalonado*—stairsign.[8] To this also, we shall refer, in another connection. Around the base of the vessel, in the region analogous to that occupied by the painted hunting-scene in Figure 1, we see a landscape. The trees and plants are shown by means of shallow lines engraved, apparently with a blunt stick while the clay was still moist, in the reddish slip of the vessel. This landscape is full of charm because of its quaint realism. It is even possible to attempt to identify the tree as an algaroba and the smaller plants as cactus. This sort of vessel sometimes leads students into attempting an "interpretation" of the scene. While the modelled portion of the vessel undoubtedly represents some sort of ceremony employed by the people of that period, it is, nevertheless, dangerous to reconstruct, let us say, a totemic clan organization, from such evidence as this.

As the vases shown in Figures 1 and 2 represent a very large and important sub-type of the Proto-Chimu pottery, it will be well to summarize briefly our impressions of them before going on to an examination of the other sub-types.

We see that the vessels of this sub-type comprise two separate areas of decoration, each marked by a distinct technique. In both the painted (or engraved) area and the modelled area of the two vessels we observe the following features: (1) A marked tendency toward realism of representation; (2) A decided lack of rich and varied coloration (dark brown, red and cream color being the tints found); (3) A gracefulness of line which is not constricted by any sort of conventionalization; (4) The use, by several of the human figures, of masks or face-painting, of fangs and of an easily recognizable type of headdress. If the reader will examine the Plates in some of the works already referred to he will see further examples of these characteristics, as well as some others that occur in Proto-Chimu pottery of this sub-type. For example, look at the scenes from vessels shown by Mr. Joyce.[4] These show new forms of the headdress, the use of face-painting and of masks, the presence of fangs, and also a curious use of girdles ending in serpent heads. The black "stockings" also are found in these figures, as well as in Figure 1 of our Plate I. Also, the use of peculiar fluted wings is rather often met with.[5]

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[8] Posnansky, 1913.

So much, then, for the modelled and painted sub-type of Proto-Chimu vases. There are still several other types for us to consider. Look, for example, at Plate I, Figure 3. This specimen, the original of which is in the Peabody Museum, Cambridge, comes from Chimu (Trujillo) and shows, in addition to the typically Proto-Chimu fangs, a further development of the headdress. The latter seems to be composed of the stiff ridge or core found in the headdresses of Figures 1 and 2 with the addition of ornaments that may be intended for feathers. These feathers are important, and they will be referred to in connection with our analysis of Proto-Nasca art and of the Chavin Stone.

Plate I, Figure 4, shows an example of a type of vessel that has always excited admiration in students of ceramics.[6] It is called the "Portrait type." Possibly this particular example is not really Proto-Chimu, but similar "portraits" have been found that have painted on them unmistakable Proto-Chimu decorations.

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[4] Joyce, 1912, pp. 126, 127.

[5] See Joyce, 1912, p. 155, for an admirable specimen of Proto-Chimu vase-painting with fluted wings, serpent-tail and fanged masks. Also examine plates in Reiss and Stübel, 1880-87, and in Baessler, 1902-03.

[6] See, for example, Jacquemart, 1873, pp. 190 ff.; and Young, 1879, pp. 404 ff.; Squier, 1877, pp. 180 ff.

As the specimen here shown has a headdress that has several points in common with that of the chief figure in Figure 1, it is assumed for the nonce that this "portrait" *is* Proto-Chimu. No one who has studied a series of these human-faced vessels and has noticed the wide differences and unfailing individualization that characterize each one of them can fail to lean toward the belief that this type of vase is indeed a "portrait type." There is absolutely nothing of inherent impossibility about the idea that a people so highly gifted with plastic skill as the Proto-Chimu people may have developed the habit of employing their vessels as a medium whereby to perpetuate the likenesses of their great men. In any case, empirical evidence leads us to believe that some such habit did prevail, for every good specimen of the "portrait type" portrays an *individual,* not a *type.* And it should be noted that realistic portrait-making is in entire accord with the marked realistic tendencies of the Proto-Chimu culture pottery. Nor are "portrait types" lacking in other parts of America.[7]

Last of all, in the matter of Proto-Chimu sub-types, comes that variety which is represented by Plate I, Figure 5. In this division come almost innumerable stylistic decorations which, though they may show slight conventionalization, never show geometrical tendencies to the exclusion of all curves. The present specimen, in the writer's opinion, is intended to represent a starfish.[8] In this type also occur many variations of the "stair-sign" (*signo escalonado*) often in conjunction with the starfish (or octopus) motif.

Passing over for the present the numerous forms of pottery which may some day be definitely assigned to this period (a passing-over process which will have to be repeated many times in the present state of our information), we will endeavor to draw up a tentative classification of the Proto-Chimu sub-types.

Sub-type I Landscapes. Vessels having modelled scenes as well as painted or engraved ones. Usual colors: white or cream slip, dark brown and red.

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[7] Spinden (1916b) claims them for Central America, and Holmes (1916b) shows an excellent example of aboriginal portraiture from Quirigua.

[8] It is the opinion of Prof. MacCurdy that the design here mentioned is derived from the octopus, not from the starfish. This, of course, may well be the case.

Sub-type II	Portraits. The faces of the portraits often have features in common with Sub-type I and Sub-type III, (such as headdress, formal incidental decoration motifs, etc.).
Sub-type III	Partly conventionalized decorations. Even these, however, are seldom rectilinear entirely. Cream and red are the more usual colors.
Sub-type IV	Numerous miscellaneous types not yet decided upon.

Having completed our study of the distinguishing elements of Proto-Chimu art, we will now examine into the traits of Proto-Nasca art.

We have seen that realism, grace of line and light coloring were three of the chief characteristics of Proto-Chimu art. We find in Proto-Nasca art an almost complete reversal of these features. There is, to be sure, an apparent attempt at realism in some of the Proto-Nasca sub-types, but it is an unsuccessful one in most cases. Look, for instance, at Plate II, Figure 2, and at Plate II, Figure 1. In both of these we have a survival of the wonderful modelling that marks out Proto-Chimu art from all the rest. Both of these specimens preserve a certain degree of realism. The former, to note the most prominent feature in each case, holds in his left hand a spear-thrower almost identical with those found in Peru by Dr. Uhle.[9] It would be hard to find a better representation of an object than this one. Then, too, the hands on the other specimen mentioned are absolutely realistic. Their realism consists above all in this: That they are shown in the natural closed position and the finger-nails of the fingers are not shown. These two specimens, therefore, both with five-digit hands and fairly well-modelled heads, may be said to represent a survival of the Proto-Chimu art-tradition in the Proto-Nasca type and, at the same time, to constitute the nearest approach of Proto-Nasca art to realism.

Wares of this type were not, however, the most characteristic expression of Proto-Nasca art. Far more common and far more typical were such productions as those that appear on Plate II, Figures 3-6, and Plates III and IV. Excellent examples of Proto-Nasca plastic art are given by numerous writers, to whose work the reader is urged to refer.[10] By study of the Plates that accompany this article and those that go with the works here referred to, it will be seen that in the matter of form the Proto-Nasca pottery was not so diverse as the Proto-Chimu. A tentative division into sub-types will, as in the case of Proto-Chimu, be offered for the Proto-Nasca art. At present we will limit ourselves to a consideration of the decoration.

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[9] Uhle, 1909.

Color is indubitably the "strong point" of Proto-Nasca art. For example, Plate II, Figures 3, 4 and 6 are all of remarkably rich tonality. Red, brown, gray, yellow and black, as well as cream-color, are the tints most frequently met with. The finish of some of the Proto-Nasca pots is so lustrous as almost to suggest a glaze. As for the subject-matter of Proto-Nasca art, it cannot be so easily described as that of Proto-Chimu, although the two have much in common in that respect. Proto-Nasca vase-paintings mostly concern themselves with the portrayal of a few personages who, being few in number, occur again and again in the vase paintings. These paintings were no doubt supposed to represent deities or mythical persons; at all events, there is absolutely nothing realistic about them; they are merely elaborate and formal portrayals of putative objects of veneration. The chief personages of Proto-Nasca art seem to be two in number. Each occurs in several variations. We will describe them in turn, applying arbitrary names for the sake of ease of identification.

The "Centipede God." See Plate II, Figures 3 and 4, Plate III, Figures 1 and 2, and Plate IV, Figure 2. The name chosen is suggested by the fact that this 'god' is usually shown as having a long body at right angles to his face and fringed with spike-like objects that are evidently conventionalized legs. Sometimes he has a series of subsidiary human faces where the legs ought to be; sometimes both legs and faces occur (as in Plate III, Figure 2). Again, the "Centipede God" is shown as a man, strongly conventionalized to be sure, who has centipede attributes such as the girdle shown in Plate II, Figure 4. It is very interesting to note certain well nigh invariable features that mark the portrayal of the "Centipede God," whether that 'god' is the chief portion of the design or merely a comparatively insignificant adjunct to the design. These features are: (1) The use of a very distinctive mouth-mask; (2) The predominance of hands with less than the true number of digits, usually with four digits; (3) The frequency with which the tongue is shown sticking out of the mouth; (4) The almost invariable presence of a broad flat headdress in the form of a rather highly conventionalized human face; (5) The frequent appearance of ceremonial staffs held in the hands. We will say a few words about each of these features in turn.

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[10] Joyce, 1912, Plate I, Joyce, 1913b; Therese von Bayern, 1907; Reiss u. Stübel; Baessler, 1902-03; Berthon, 1911, Plates I-VI; Uhle, 1913b, p. 358 ff.

(1) The Mouth Mask. Plate II, Figure 3, and Plate III, Figures 1 and 3, show very typical forms of this element. In Plate III, Figure 1, it is seen to consist of a central portion with mouth- and nostril-holes and of two wing-like portions, one on each side of the mouth. These wings are marked by lines of a conventional nature that may be a survival of the curling-feather-like rays that distinguish the mouth-mask of Figure 3. These rays are perhaps related to certain elements of decoration that occur in later arts, as well as in other sub-types of Proto-Nasca art.

(2) Four-digit Hands. Plate II, Figure 3; Plates III, Figures 2 and 3, and IV, Figure 2, all show typical examples of the four-digit hands that so often accompany, as in all these instances, one or more of the several criteria that mark this "Centipede God" motif. The development from natural five-digit hands to these very artificial conventionalized four-digit hands is a matter of great importance, as will be shown in connection with Tiahuanaco II art.

(3) The Protruding Tongue. The Plates already mentioned show this feature. In the pottery with the "Centipede God" motif the protruding tongue is not nearly so widely developed as it is in some other cases, especially in that of the textiles. But even in the "Centipede God" figure on Plate III, Figure 2, the tongue shows the beginnings of decoration on its upper surface. The element of tongue-decoration becomes very prominent in other types of Proto-Nasca pottery.

(4) The Broad Flat Headdress. Plate III, Figure 1, shows a standard form of the "Centipede God's" headdress. The brim almost always consists of at least two layers separated by a line. In the center, over the eyes of the 'god,' is a conventionalized

human face. Typical forms of this headdress are shown on Plate II, Figure 3, on Plates III and IV.

(5) The Ceremonial Staffs. The Plates already mentioned show good examples of the staffs. It is to be noted that in vase-paintings where the mouth-mask, headdress and hands preserve the greatest amount of naturalism the staff most closely approximates the spear-thrower shown in Plate II, Figure 2, though at no time is the resemblance very strong. In the more conventionalized designs, however, the staffs (here usually two in number and so arranged as to be bilaterally symmetrical) are themselves so conventionalized as to be scarcely definable in regard to their use.

Bearing in mind the well-known principles that apply to decorative arts, the principles of elimination and simplification which will be spoken of later, the writer ventures to suggest that of the two groups of pottery that we have been studying, that exemplified by Plate II, Figures 1, 2 and 3, is the older, and that the "Centipede Gods" on Plates II, III and IV were a later style. So much, then, for the modelled ware and for the "Centipede God" motif.

We will now examine another motif which may be called, for the sake of convenience, the "Multiple-headed God." Our Plate II, Figure 5, shows an excellent specimen of this motif. Another is shown by Joyce (1912, Plate I). In this motif the heads of the personage consist of hardly more than eyes and mouth and tongue. In some cases, the body of the 'god' has a chief head in approximately the correct position. Then, running out from the shoulders, are a lot of subsidiary heads attached to the body by their run-out tongues. The subsidiary heads are decorated by feather-like rays reminiscent of the decorations on the mouth mask seen on Plate III, Figure 3. Sometimes, as in Joyce's Plate I, the chief head has a headdress of the type associated with the "Centipede God." Also, the "Multiple-headed God" and the "Centipede God" have other points in common, notably: (1) The occasional presence of a centipede-like girdle with the tongue sticking out (see Joyce, 1912, Plate I); (2) The presence of four-digit hands (though five-digit hands sometimes appear in both); (3) The presence of the minor decoration, seen in our Plate II, Figure 3, and in Joyce's Plate I, made up of two thick rings with a tassel or tassels hanging from them: (4) The beginnings of a marked tendency toward bilateral symmetry, both of line and of color: (5) The continuance in the "Multiple-headed God" motif of the rich coloration found in the "Centipede God" motif. (Joyce's Plate I shows the presence of buff, blue, yellow, purplish-red, pink, white and black.) The mouth-mask and ceremonial staff usually do not appear in the "Multiple-headed God" motif designs.

The "Centipede God" and the "Multiple-headed God" appear to be the chief personages of Proto-Nasca vase-painting. They do not, however, by any means include all the forms that go to make up this complex art. Space permits us to mention only one other constantly recurring feature. This is the human face which is to be seen in our Plate IV, Figure 2, and in Joyce's Plate I, at the base of the vessels. When this face appears thus, painted, not modelled, it strongly suggests the modelled faces that appear in Plate II, Figure 1. The manner in which the eyes are shown, the hair-dressing, the nose and the mouth are all strikingly alike in both the modelled and the painted versions of the motif. At the same time, it should be noticed that very often lines suggestive of tears run down a short distance from the eyes of the painted forms, but not from those of the modelled ones.

What has been said of Proto-Nasca art is, of course, very far from beginning to be an exhaustive study of that subject. It is, however, enough to give a fair idea of the chief features of that culture. It is but right to say, nevertheless, that aside from the vases bearing decorations more or less anthropomorphic or zoomorphic, whether modelled and painted or merely painted, there is another class of Proto-Nasca vessels which, though having the rich coloration and the same general technique of the other classes, is merely decorated with such patterns as dots, lines and so on like those which appear in some of Berthon's Plates (1911).

We will now attempt to draw up a classification of the subtypes of Proto-Nasca pottery. Then we will take up the question of Proto-Nasca textiles.

Although all Proto-Nasca pottery may be said to be distinguished by a subordination of form to color and of realism to complexity, it is not enough for us to content ourselves with this general sort of statement. We must look further with a view to establishing various sub-types of Proto-Nasca art, for it must necessarily be assumed that the people who produced the art flourished for at least two or three centuries and that they developed in that time a number of modifications which appear in their productions. Before we do this, however, we must definitely assure ourselves as to whether we have been correct in assuming that Proto-Nasca art was indeed related to or descended from Proto-Chimu art. For the present we shall content ourselves with examining into the relationship of the two without attempting to prove the descent of one from the other. The Plates in this article, those in Joyce's article on the Clan-Ancestor (Joyce, 1913b), those in Berthon (1911), and in the articles by H. R. H. Prinzessin Therese von Bayern (1907), and Uhle (1914), afford ample material for a comparison. An examination of the two arts brings out the following points of contact: (1) The use of eye-painting and masking; (2) The presence of feather-like ornaments; (3) The use, in connection with the costume, of various appendages and adornments derived from or suggested by animals or parts of animals (i. e. such elements as the centipede girdles); (4) The gradual transition from realistic, modelled, five-fingered Proto-Chimu art to partly realistic, modelled five-fingered or four-fingered Proto-Nasca art, together with the apparently contemporaneous rise of non-modelled, constantly more conventionalized forms of vase-painting.

From the foregoing it will be seen that a very real underlying similarity of subject-matter binds Proto-Chimu art to Proto-Nasca.

Reserving for another place the critical consideration as to the descent of Proto-Nasca art, we will now present a tentative classification into sub-types on a combined basis of form and decoration.[11]

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[11] The author wishes to call attention to the very able study of Nasca pottery by Edward K. Putnam (1914), and to say that he departs from the classification of Proto-Nasca pottery offered by Mr. Putnam only because it is too detailed for his present purposes and because it does not emphasize the points he wishes to bring out.

CLASSES	REMARKS
I Modelled and painted ware	The class most like Proto-Chimu.
a Semi-realistic	That is, having fair modelling in combination with five-digit hands.
b Non-realistic	That is, poor modelling combined with four-digit hands.
II Painted ware—not modelled	The predominant Proto-Nasca type.
a "Centipede God" Motif	Perhaps derived in part from the Proto-Chimu habit of masking.
b "Multiple-headed God" Motif	Linked to "Centipede God" in several ways (see above) and to Proto-Chimu by use of feather-like ornaments.
c Painted human face motif	Found usually on the same vessels as the two foregoing types, it is, at the same time, strongly like Class I, a, and Class I, b.
d Miscellaneous	Forms made up of all sorts of elements borrowed from the foregoing types.

Having reviewed the distinguishing marks of Proto-Nasca art as represented by the pottery, we have now arrived at the important question of Proto-Nasca textiles. It has been said by good authorities that there were no textiles dating from a time prior to the rise of the culture of Tiahuanaco II.[12]

It is, however, the opinion of the present writer that this belief is a mistaken one. It will, no doubt, be granted by anyone that if Proto-Nasca textiles *do* survive to the present day, they will have the same or similar designs upon them as do the pottery remains. We shall endeavor to show that such designs do survive in textiles. Before doing so, however, it will be well to remind the reader that there is no class of textiles that can safely be assigned to the Proto-Chimu culture.

The reader's attention is called to Plate IV, Figures 1 and 3. The first shows a woven cloth from Ica now in the Museum of

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[12] Joyce, 1912, p. 200; Beuchat, 1912, p. 574.

Fine Arts, Boston. The second shows a border from an Ica shawl in the American Museum of Natural History, New York.

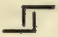
We will begin with an examination of Plate IV, Figure 3. In it we discover a number of striking analogies with Proto-Nasca pottery designs. Like the vase-paintings of the "Centipede-God" type, this design has: (1) A mouth-mask which combines wing-like side ornaments of the same type as those on Plate III, Figures 1 and 3, with a pair of feather-like ornaments reminiscent of those in Plate III, Figure 3. (2) The hands of the figure (as far as one can tell) and its feet have less than the true number of fingers and toes. (3) The tongue is run far out and is highly decorated, a tendency already shown in the pottery. (4) The headdress is broad and flat; it has a brim made up of two layers and there is a conventionalized human face in the center. Compare it with the headdresses on Plate II, Figure 3; on Plate III, Figure 1, and on many other Proto-Nasca vase-paintings of the "Centipede God" type. Also remark that in this textile design, as in some examples of the "Centipede God" pots, the centipede element is preserved by the girdle-like appendage. The tongue of the figure likewise reminds one of the centipede motif. In other words, of the five criteria that we found to be distinctive of the very important "Centipede God" motif Proto-Nasca vessels, four are present in the textile design which we have been studying. Does not this suggest that the textile and the vase-paintings in question have a common source which accounts for their similarities in subject-matter? Again, Plates V and VI seem to have several points in common with Proto-Nasca pottery, although, on account of the comparative complexity of their embroidered designs, it is hard to know whether to compare the personages they portray with "Centipede God" or with the "Multiple-headed God." For this reason, therefore, it will be best for us to content ourselves with comparing these textile designs with Proto-Nasca vase-paintings in general. The following features, then, may be observed in both the textiles in question and in various specimens of Proto-Nasca pottery: (1) The mouth-mask with wing-like side ornaments; (2) The protruding tongue, highly decorated and endowed with centipede-like attributes; (3) The broad flat headdress decorated with a conventionalized human face; (4) The color-scheme is very suggestive of Proto-Nasca pottery.

The foregoing remarks are meant to convey the impression that Proto-Nasca designs do occur on both pottery and embroidered textiles. Since this is so, the writer finds it impossible to imagine how anyone can assume, as some have done, that they were not made by the same people. Differences between the textile designs and the pottery designs do exist, of course, but in the writer's opinion, they may all be explained by the difference in medium, the technique of pottery decoration not unnaturally causing results divergent from those produced by textile embroidery.

Without pausing at present to discuss the transition from Proto-Nasca art to Tiahuanaco II art, we will now turn our attention to the region of Lake Titicaca and study the early cultures in that area.

2. A CRITICAL ANALYSIS OF TIAHUANACO II ART.

Hitherto in our study we have had to deal mainly with pottery and textiles. In the case of Tiahuanaco II art stone adds itself to the other two as an important art-medium. If it were our purpose to follow Tiahuanaco II art in all its ramifications, we should have to consider the bronze work of northern Argentina as well. The chief media, then, for the art of the exceedingly important period we are about to study are: in the highlands, stone and pottery; in the coast-regions, pottery and textiles.

We will first examine the Tiahuanaco II art with a view to setting forth its content and characteristics. The reader is urged to turn to Plate VII which shows the chief figure of the great monolithic gateway at Tiahuanaco. The Plates in Posnansky's work on this site should likewise be consulted.[13] For want of a better term we have referred to this figure as the "Weeping God." Variations of it occur over a huge area, and in stone, pottery, textiles and bronze. Sometimes the "tears" are lacking, but there is always some other feature to identify the several variations. We will now minutely examine the Weeping God on the great monolithic gateway. He is a short stocky personage with a large head which is almost square. Around the head is a sort of frame; the inner band of the frame is adorned with a series of the  sign which we shall find often later on.

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[13] Posnansky, 1914, Plates LXV-LXXXIV.

Standing out from the inner band are twenty-four ray-like tabs or tassels. These tassels, all of them conventionalized, fall into three groups or classes. (1) The puma-headed tassels, six in number and much conventionalized; (2) Tassels, seventeen in number, composed of what look like ribbons ended off by stone rings, but which cannot well be described with accuracy because of their conventional nature: (3) One anthropomorphic tassel showing the conventionalized face of a man with eyebrows and nose shown continuous. The face of the Weeping God has been destroyed by time to a deplorable extent, but two large round eyes, deeply sunk, remain almost unharmed. From the eyes hang two bands ended off with puma-heads. On each of the bands are two sunken dots suggestive of "tears." The nose of the figure has been shattered, but it was probably once quite prominent. At present it is squarish and rather broad and long. The whole face is covered over with traces of secondary ornamentation. The body is not separated from the head by any definite neck. The mouth is a mere rectangular slit sunk in the face, totally lacking in any true modelling, the body is short and chunky, and the legs are much too short to be in proportion, unless, indeed, a kneeling posture is indicated. The garment of the figure is a short fringed skirt held up by shoulder-bands. The top of the skirt is marked with rectangular decoration of a type to be observed elsewhere on the carving, and by two puma-heads similar to those on the headdress and elsewhere. The fringe of the skirt is made up of six human faces of the same type as that noted on the headdress. The shoulder-bands are adorned with a conventionalized figure alternated with conventionalized bird-heads. A large breast ornament hangs between the shoulder-bands. It has the form of a fish in semi-lunar posture with his head to the left and turned upward and his tail, to the right, also turned upward. The face of the fish recalls the conventionalized human faces already noted. Just below the fish is a repetition of the conventionalized figure that appears on the shoulder-bands and two other examples of the bird-heads that also appear there. The arms of the Weeping God, though not at all true to nature, are the best modelled parts of the figure. At each elbow are two puma-heads, one above the other. From the two lower puma-heads hang two more conventionalized human faces. The hands of the figure have but four digits. In the right hand is a large ceremonial staff. The upper half of it bears a rectangular decoration just like that on some of the tabs of the headdress. It is surmounted by an indeterminate object. The lower half of the staff is decorated in much the same way save for the fact that the central panel is sunk as it is on the upper border of the skirt. The base of the staff consists of a conventionalized bird-head. In the case of the staff in the left hand of the Weeping God we find the lower half identical with the one just described. The upper half, however, is bifurcated and the two prongs are topped by bird-heads similar to those already seen on the breast-ornament.

Having enumerated in detail the features of the Weeping God, it will be well for us to note in general terms some of its characteristics. In the Weeping God, then, we have a highly conventionalized bas-relief in stone which shows considerable artistic advance. For one thing, the tendency toward bilateral symmetry noted in connection with Proto-Nasca art appears again here, and it has gained considerably in strength. Save for the staffs and the breast-ornament, the Weeping God is bilaterally symmetrical, and the exceptions to that symmetry do not in the least interfere with the impression of perfect bilateral balance. Moreover, the constant re-statement of three or four motifs of decoration in various combinations is eloquent of conventionalization that has been long in developing. Lastly, the technique of the bas-relief is of that square-edged type which would naturally develop out of a round-surfaced stone technique after conventionalization had set in.

On the same gateway with the Weeping God are forty-eight secondary figures in relief of the same type. There are twenty-four on each side of the central figure. Here again, the tendency toward bilateral symmetry is observable, for all the figures face toward the Weeping God. These secondary personages fall into two classes: (1) Those with bird-like bodies and human faces; and, (2) Those with bird-like bodies and bird faces. Each of them bears before him a staff which approximates in form to one or the other of those held by the Weeping God. All the figures of both classes have four-digit hands, tears and tear-lines, and a constant repetition of the _|‾ sign, and of the puma-, fish- and bird-head motifs. The wings of the figures are, in part, almost realistic, and they recall the fluted wings we noted in connection with the Proto-Chimu art. All the figures are represented as running toward the Weeping God, and the speed of their motion is well indicated by their cloak-like garments which are streaming out behind them.

Repetition and re-statement of decorative motifs and themes, together with the tendency toward symmetry, may be said to be the underlying principle of the conventionalities of Tiahuanaco II art as embodied in the monolithic gateway. It is especially noted in the frieze which runs the whole length of the gateway just below the Weeping God and just above the doorway. Throughout that whole composition fragments and portions of motifs already noted can be picked out.[14]

Aside from the typical Tiahuanaco II decorations on the several gateways at Tiahuanaco (the others are unimportant), the same or similar motifs appear on the pottery from that vicinity. The American Museum of Natural History has a fine collection of Tiahuanaco II pottery from Copacabana and Tiahuanaco. In general the tonality is rather sombre, red and black being the most frequent colors. Sometimes, however, white and orange also appear. In the Peabody Museum at Harvard University there is a small but excellent cup of this period decorated with the face of the Weeping God. Sometimes, as in the case of some of the New York specimens, the Weeping God appears in the pottery without his tears; at other times the decoration takes the form of parts of the secondary motifs, such as puma- or bird-heads in the Tiahuanaco style, or variations of the second type of tab on the Weeping God's headdress (i. e. the "ribbon-and-stone-ring" motif). Cups, bowls, ollas and vessels with spouts like those on teapots are the commoner forms. One of the New York specimens measures almost a foot across although it is but a fragment. Modelled puma-heads in clay also occur. In short, the plastic art of the Tiahuanaco II period, although it is none too plentifully represented in our museums, is richly diversified.

Our Plate VIII, Figure 1, shows a poncho from Tiahuanaco now in the American Museum of Natural History, New York. The writer believes that, although it bears none of the motifs so far shown to have been typical of Tiahuanaco II art, it does bear a swastika-like motif on its border, and is therefore to be connected with a cup with the same motif shown by Joyce (1912, p. 207). This cup, both because of the puma-heads and because of the general technique, is obviously Tiahuanaco II. The swastika is a motif which is excessively rare in Peruvian art. The ones in this specimen are not perfect in form. The reader is warned that this garment may not be Tiahuanaco II after all, though the writer now believes that it is.

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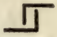
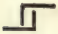
[14] See Posnansky, 1914, Plates LXXIII-LXXXI.

Plate VIII, Figure 2, shows a fine piece of cloth from the Nasca region. It has affinities with both the Proto-Nasca and Tiahuanaco II styles as follows: With Proto-Nasca, face-painting (or masking), centipede element, and coloration; with Tiahuanaco II, tear-lines, eyebrows and nose in T form, three-digit hands. The specimen is in the Museum of Fine Arts, Boston, and is the gift of Dr. Denman Waldo Ross.

Though it may at first seem illogical, we will now turn our attention to the Tiahuanaco II art of the coast; then we will study it in another region of the highlands. The reason for this course will become apparent later.

The writer regrets that he has not been able to obtain any satisfactory pictures of coast Tiahuanaco II art. Much material is readily accessible to the student, however, and the following works should be consulted: *Baessler, 1902-03; Reiss und Stübel, 1880-87;* Holmes, 1889; Oyarzún, 1910; *Uhle,* 1901, 1902, *1903, 1908,* 1910, 1910b, 1910c, 1912, *1913, 1913b, 1914; Putnam, F. K., 1914;* Therese von Bayern, 1907; *Beuchat, 1912; Joyce, 1912, 1913b;* Bamps, 1879. (The reader is especially referred to the works in italics.)

It will be remembered that in the Tiahuanaco II art of the interior two things were very noticeable: the tendency toward bilateral symmetry in the design, and the comparative poorness of coloration. Of these characteristics only the former appears on the coast. As in the case of Proto-Nasca art, coloration on both vessels and textiles was extremely rich. For example, look at Plate 134, Figure 373, in Baessler. The design that appears at that place shows two birds with squarish heads. The design comes from Pachacamac. A detailed description of it may be of use to the reader. The two birds, whose heads alone appear, face one another. They have hawk-like beaks, darkened eye-areas and headdresses adorned with tabs ending off in three fringes just like those on the minor figures of the monolithic gateway at Tiahuanaco. The angularity so noticeable in the art of this period at Tiahuanaco itself is here preserved to a considerable degree. Between the two bird-heads and around each of them is a frame or border adorned with repetitions of the  sign. Although the Plate in question is not in color, several tints are indicated. Again, Baessler, Plate 144, Figure 403, shows a wonderful specimen of coast Tiahuanaco II art. It is a goblet from Pachamac adorned with a very beautiful design. The colors are cream, purple, gray, brown, red and black. The finish is lustrous and the arrangement of the color-areas is masterly. The decoration resolves itself into several bands. At the top is a band of the stair-sign motif; it is gray with purple borders. Attached to the outer edge of the borders are a number of conventionalized puma-heads in purple. They are reminiscent of those on the monolithic gateway. Those on the top of the band face to the reader's right; the ones at the bottom face to the left. On the gray central stripe of the stair-sign band are a number of conventionalized three-digit bands in black and gray alternated with similar feet in brown, cream and black. Below this band of decoration comes a narrower one made up of  signs in red on a cream ground. Below that, in turn, comes a wide band of black on which is painted an almost bilaterally symmetrical square-headed Weeping God. A slight difference in the two ends of his mouth is the sole exception to symmetry. His eyes are in cream and black and, like those of the Weeping God on the monolithic gateway, are large and round with a band of "tears" running down from each of them. The face is red, the nose, gray in color, is broad and squarish like that of the Weeping God at Tiahuanaco. His gray lips form a rectangular mouth containing three groups of rectangular teeth and two groups of fangs, the order being, from left to right, teeth-fangs-teeth-fangs-teeth. The teeth are cream-colored. Finally, at the bottom of the design, comes a band containing twelve oblong rectangles on each of which are two small disks of color with a dot in the center. These rectangles are arranged in double file, six in a row. They are arranged in the manner here approximately indicated, and they may be said to be a sort of study in color-arrangement. Numbers 1, 3, 5, 8, 10 and 12 are red with cream disks; 2 is cream with purple disks; 4, 9 and 11 are gray with red, purple, red disks respectively; 6 and 7 are purple with cream disks. What this design can have been intended to represent it is difficult to imagine. The only thing it seems to bear the slightest resemblance to is the group of finds on the island of La Plata, Ecuador, which Dorsey called "Perforated and engraved stones." These objects are small rectangular oblongs upon which are engraved circles with a dot, the number varying from three circles up to eight. Dorsey suggests that perhaps the stones in question were used in some game.[15]

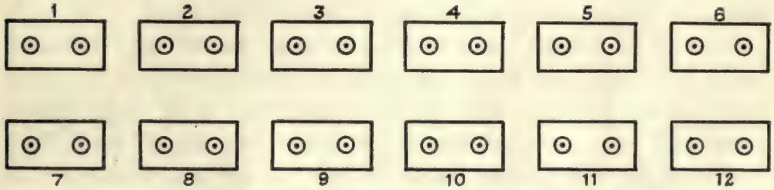


FIG. 1.

The decoration composed of small circles with a dot in the centre occurs also on some objects from Machu Picchu. Its occurrence there may mean one of several things: (1) That some subjects of the Tiahuanaco II "empire" were once at Vilcabamba and left these objects behind them; (2) That the subjects of the Inca who dwelt at Vilcabamba happened to see the motif on some remains of the former period and copied it; (3) That the design, which is essentially simple, was "invented" twice, first by the coast Tiahuanaco II people, secondly by the Inca's subjects. The writer inclines to the belief that the last is the correct explanation. It is, however, so simple a design that it has been "invented" again and again in various parts of the world.

One more example of Tiahuanaco II art in connection with the pottery of the coast will serve to round out our present brief account of the matter. It is found in Baessler, Plate 140, Figure 392, and it shows another variation of the square-headed Weeping God motif. The colors are red, cream, brown and white. The figure is shown at full length. As before, the resemblances to the Weeping God of Tiahuanaco, despite the divergences, are very marked. The face of this coast Weeping God, then, is surrounded by a frame strikingly like that of its prototype. From the inner band decorated with dots spring eleven tab-like decorations which fall into three groups on the basis of form: (1) Three straight tassels ending in a fringe of three pieces; (2) Six tabs reminiscent of the ribbon-and-stone-ring tassels of the Weeping God of Tiahuanaco; (3) Two long tabs ending off in an affair similar to the fringed tabs of the first type. All these are arranged about the face in such a manner as to result in absolute symmetry. In fact, the whole figure is absolutely symmetrical save for the arrangement of the color-areas. The eyes are cream and brown and are large; the "tears" are indicated merely by two lines, one running down from each eye. The nose is broad and square; the mouth rectangular with eight square teeth and no fangs. Two hands with four digits grasp two staffs which are exactly alike except for color and which are arranged symmetrically. They suggest tremendously conventionalized bows, and are adorned with repetitions of the fringed tab element. In short, this figure, besides presenting several very close resemblances to the Weeping God of Tiahuanaco in its details, resembles it in more general terms also. We find in the Tiahuanaco figure a strong tendency toward bilateral symmetry, a symmetry which is fully attained in this coast figure. More than that, we observe that the two have another significant characteristic in common, namely, the constant re-statement of minor decorative elements (such as the fringed tab). These resemblances are extremely significant.

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[15] Dorsey, 1901, p. 262, and Plate LVII.

So much, then, for Tiahuanaco II designs on the pottery of the coast. The material relating to Tiahuanaco II designs in coast textiles is no less ample, and the evidence it presents points just the same way as that offered by the pottery. We will, therefore, consider only one example of Tiahuanaco II coast textile-design. It is shown by Reiss and Stübel, vol. II, Plate 49. It is a rich garment from Ancon. There are two variations either of the Weeping God himself or of the two types of minor figures on the monolithic gateway. We will enumerate the analogies between this design and other arts that we have examined. One of the two variations has: (1) A human face and a headdress suggestive of the first type of minor figure on the monolithic gateway (i. e. human face with bird body); (2) Tears and tear-lines; (3) Four-digit hands; (4) Two staves; (5)

Shoulder-bands; (6) Fish and bird attendants; and, (7) A mouth similar in shape to those on the monolithic gateway. The other variation has: (1) Fluted wings recalling both those found in Proto-Chimu art and those found on the minor figures of the monolithic gateway; (2) Five-digit hands reminiscent of those on some of statues at Tiahuanaco and of Proto-Chimu art, also; (3) Tears and tear-lines; (4) One staff; (5) A decoration on the headdress suggestive of the "ribbon-and-stone-ring" motif of the Weeping God both at Tiahuanaco and on the pottery just reviewed. The colors in this tapestry are by far the richest we have yet come across, and they are not likely to be surpassed. They are yellow, light yellow-brown, dark yellow-brown, red, pink, pale green, purple, black and white. The effect is one of great richness, and also of a generally light tonality, wherein, perhaps, we may see the influence of Proto-Chimu art. To sum up our impressions of coast Tiahuanaco II art we will say that it derives its minor motifs and its tendency toward symmetry, or rather its marked indulgence in symmetry, directly from Tiahuanaco which also provided most of the subject-matter. The rich coloring, however, came from Proto-Nasca.

Having now completed our survey of Tiahuanaco II art in the Titicaca drainage and on the coast, we will examine its manifestations in another part of the highlands. Before doing so, however, we will mention in passing the fact that save for a vestige here and there Tiahuanaco II art does not appear prominently in the Cuzco region. One exception to this rule is a pottery vessel adorned with an anthropomorphic puma having four digits, fangs and tab-like head ornaments. Its provenance is Cuzco, and it is shown by Seler.[16]

It is the Tiahuanaco II art at Chavin de Huantar, however, that claims the major part of our attention.

The chief example of ancient art at Chavin is the famous greater Chavin monolith. This wonderful piece of stone-carving is in the Museo Nacional at Lima. It is about six feet long and two broad.[17] Probably no other single artifact from Peru helps more than this in the study of the relations between Proto-

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[16] Seler, 1893, Plate VII, Fig. 8.

[17] The writer has seen and examined the original stone. Both Sir Clements Markham and Mr. Joyce are mistaken in thinking the stone to be twenty-five feet long. Markham, 1912, p. 34; Joyce, 1912, p. 176.

Chimu, Proto-Nasca and Tiahuanaco II arts. Several able studies of the stone have appeared, chief among which are two by Markham and that by Polo.[18] With the aid of our Plate IX we will now examine this stone and its bearing upon our subject.

The characteristic of the stone which first strikes the beholder is the tremendous elaboration of the design. One has to study it carefully before it resolves itself into its component parts. When this is done, it becomes apparent that the design falls into halves, the lower of which shows a personage holding two staves, and the upper of which is made up of a mass of inverted faces with their secondary decorations. We will study the halves in that order. The personage is unquestionably derived in part from the Weeping God motif. The face is square and is edged with serpent-heads faintly analogous to the tab-like ornaments of the Weeping God. The face, on the other hand, is utterly different in both content and treatment from that of the Weeping God. Indeed, it is very difficult to decide just which of the numerous complex features belong to the face of the personage. One may assume, if he chooses, that the two upper dots are his eyes and the involutions just above them are conventionalized eyebrows while the two dots below are nostrils. This is, perhaps, the most satisfactory interpretation.[19] The mouth which, from one aspect, looks like an adaptation of the toothed and fanged rectangular mouth seen in coast Tiahuanaco II, again presents difficulties because, on turning the Plate upside down, it turns out that the mouth is formed by two fanged puma-heads set nose to nose and lip to lip. It may be suggested that in the group of details formed by the puma-heads and the twined serpent-heads just behind each of them we see a faint survival and tremendous conventionalization of the mouth-mask of Proto-Nasca art. As in the case of the Weeping God on the monolithic gateway, the body is short and square. There are no

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[18] Markham, 1904 and 1908; Polo, 1899.

[19] Prof. MacCurdy's interpretation of the plate differs from the writer's, for he thinks the two upper dots to be the nostrils of an inverted face like those on the upper half of the stone. There is a good deal to be said in support of this view. But an examination of our Plate IX, or, still better, the large one in Polo, 1899, will show that the writer's interpretation is also valid. We may say, therefore, that the two dots in question serve, in one position, as eyes for the face of the chief head of the design, and, when reversed, act as nostrils for an inverted subsidiary head.

"tears." There is an area of ornamentation on the breast made up of a new variation of the _┌┘‾ sign edged with feather-like ornaments reminiscent of Proto-Chimu art and Proto-Nasca art. (See Plate I, Figure 3, and Plate III, Figure 3.) This feather-motif occurs many times on the stone. The garment of the personage reminds us of that on the Weeping God of Tiahuanaco in that it is a short skirt-like affair. The puma-heads that adorn the upper edge of the Tiahuanaco figure's skirt have here become so conventionalized that it is nearly impossible to recognize them. The fringe of human faces on the Tiahuanaco skirt has become mere unadorned rectangles. The arms, it is well to note, are in exactly the same position and much the same in shape both here and on the monolithic gateway. But a marked difference is found in the hands. At Tiahuanaco we found the hands of the Weeping God were fairly close to nature in their modelling despite the fact that they had but four digits. Here, on the other hand, we find a wider departure from realism in the drop to but three digits and in the elaboration of the finger nails into a decorative element. In the two staves we discover a still wider departure from the original theme. The staves are almost exactly alike, which is in itself a significant matter. They have been widened so as to make room for the immensely elaborate ornamentation with which they are encrusted. So complex, in fact, is the overlaid design that it is nearly impossible longer to distinguish any of the features that we perceived in the staves held by the Weeping God of Tiahuanaco. Some may be able to discover in the formalized faces at the base of the two staves a faint echo of the bird-heads that are found at the bottoms of the Tiahuanaco staves.

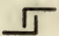
So much, then, for the lower half of the design on the Chavin stone. In order properly to study the upper half it will be necessary to reverse the Plate. On doing so we find three grotesque faces proceeding from one another's mouths and each with its tongue protruding and highly decorated. These faces all have fangs, but otherwise they are unlike one another, although the last two from the center do resemble each other closely. The nose of the first face is adorned with a combination of the feather-motif, fang-motif and serpent-head motif. The noses of the other two are much simpler and are marked only by an odd but simple comb-like figure. On each side of the central band of decoration formed by those three faces is a fringe of alternated serpent-heads and feather-motifs. The tongue of the last head is likewise encrusted with the two.

A word about the general features of this, the greater Chavin stone, should be said before we go on to compare it with other artifacts. It is a bas-relief of the same technique as the Tiahuanaco frieze. The work is finer because the stone lends itself more readily to the cutter's tools.

At Chavin is another remarkable stone carving, the lesser Chavin stone. It is described by Polo and by Enock.[20] It was found in an underground chamber; indeed, according to Enock, much of the work and many of the chambers in the "castle of Chavin" are subterranean. This feature is reminiscent of Tiahuanaco itself. The lesser stone is at once similar to and different from the greater. The chief points of likeness are the profuse use of fangs and serpents as decorative motifs, and the constant re-statement of these motifs recalls not only the greater Chavin stone, but also the monolithic gateway. The differences are chiefly these: lack of any trace of comprehensible composition, lack of bilateral symmetry and considerable modification of technique.

As our description has proceeded we have made occasional references to resemblances between the Chavin stones and other objects. It will now be our task to systematize these resemblances. Each of the elements which constitute the resemblances will be found in the following table in its appropriate column:

Affiliations Between Chavin and Other Arts.

PROTO-CHIMU	PROTO-NASCA	TIAHUANACO
Fangs		Fangs
Feathers	Feathers	
	Multiple inverted heads.	
		Puma-heads
	Staves	Staves
		Symmetry
	Mouth mask (?)	
	Too few digits	Too few digits
		Skirt
		 sign
		Repetition of motifs in many parts of the design.

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[20] Enock, 1907, p. 72 ff.; and Polo, 1899.

The table makes clear, perhaps, the three-fold source of the art found in the Chavin stones. We now find ourselves brought to the important question of the historic, artistic and ethnic relations between the three great arts we have studied.

3. RELATIONS BETWEEN PROTO-CHIMU, PROTO-NASCA AND TIAHUANACO II.

We have now studied three ancient Peruvian cultures. It is obvious that, from both the artistic and the archaeological points of view, they form a group. We must now endeavor to answer the question, How are these cultures connected?

Already we have pointed out the basic similarity in subject matter of Proto-Chimu and Proto-Nasca. From one of those cultures the other in all probability was derived. But which was the elder is only revealed by minute analysis. In the Proto-Chimu we find an art which is of a distinctly advanced nature. It has, so far as we know, no introductory manifestations, cruder in type than itself in its own locality. Inasmuch as advanced arts do not suddenly spring into being from nothingness, it can only be supposed that Proto-Chimu art was introduced into the region with which we associate it from some other region. The same may be said of the Proto-Nasca art. Uhle and Joyce seem to incline to the belief that this art is the elder of the two, and Uhle believes it to have had an origin in the north, perhaps in Middle America.[21]

Let us see, then, if Proto-Nasca can really be justly considered older than Proto-Chimu. In doing this we must first determine from what area or areas it could have been derived (assuming that it *was* derived from some source outside of the Andean area). A rapid survey of the whole field of American civilizations assures us that only from one area could such cultures as the Proto-Nasca and Proto-Chimu have been derived—Middle America. There is much evidence that seems to point toward all the South American cultures as having been derived from the region to the north, but unfortunately this is not the place to examine that evidence. We will assume, therefore, that if, as seems probable, the Proto-Nasca and Proto-Chimu cultures *were* the result of a cultural migration, that migration must have had its origin in Middle America. From a geographical standpoint, then, it would be difficult to explain why the migrants, on their way south, passed the region of Chimu and went first to that of Nasca where they developed the Proto-Nasca art after their arrival, and then gradually spread north along the coast, in time reaching Chimu where the Proto-Chimu culture was perfected. This theory is almost impossible to support on geographical grounds. But geographical objections are not the only ones. Other and more serious drawbacks to the theory present themselves.

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[21] Uhle, 1913, pp. 341 ff.; 1914, pp. 15 ff.; Joyce, 1912, pp. 178 ff.; Means, 1917.

These drawbacks we will now enumerate. In Proto-Chimu art we have a realistic art which has so thoroughly outlived the preparatory stages characteristic of all arts that there is hardly a trace left of the crudenesses that mark the infancy of all subcivilized or high primitive arts.[22] It is a decorative art that has reached so high a level as to combine no small degree of representation with its decorative purpose. In other words, Proto-Chimu art is one ripe for the influence of several principles of art-development. These principles all find their natural resultant in Proto-Nasca art.

A few quotations from Dr. Spinden's work, "A Study of Maya Art," will make clear this point. The mere fact that Dr. Spinden is speaking of Middle American art does not alter the fact that what he says applies equally well to Peruvian art or to any other art of similar rank.[23]

> "In the imaginative modification of any given natural figure, for the purposes of decorative art, there are a number of rather definite processes. Each of these is amenable to the fundamental principles of design, such as balance, rhythm and harmony, as these terms have been elucidated by Dr. Ross.[24] Each process may show, moreover, the phases of conscious and unconscious manipulation of the subject matter. Lastly, these processes of intensive development of a design motive, ... work both singly and in combination. It is possible to detect much of the counterplay.

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[22] The general remarks made here are intended to apply solely to decorative, as contrasted with representative, art.

[23] Spinden, 1913, p. 38 ff.

[24] Ross, 1901, 1907.

"The processes are: 1. Simplification. 2. Elaboration. 3. Elimination. 4. Substitution.

"Careful analysis of one group of designs after another, during which special attention is paid to the changes in homologous parts, makes pretty clear the matter in which the imagination works. In the first place, imagination does not create, it merely reshapes and recombines, taking suggestions and material from any thing lying within the field of experience. . . .

"*Simplification.* . . . Dr. Harrison Allen discusses the relations between natural forms and art forms. He finds that the tendencies of conventional art are:

1st, to repeat the normal lines of the model;
2nd, to diminish the normal lines of the model;
3rd, to modify according to a symbol;
4th, to modify according to mystic or religious ideas. . . .

"*Elaboration.* Of less real worth in the development of art, but of more common occurrence, is the process of elaboration. This process amplifies rather than reduces and by means of adventitious ornament renders the original form more complex. . . .

"*Elimination.* Elimination of one feature after another of a natural motive till only one or two survive is a common phenomenon the world over in decorative art. In Maya art the process is frequently observed in the case of the serpent. Very often the entire lower jaw is omitted. . . .

"*Substitution.* The process of substitution likewise plays a great part in all highly developed art, whether barbaric or civilized. The substitution of new and striking details for old and commonplace ones—even at the cost of the first meaning of the design—is one of the simplest and most natural ways by which imagination can reconstruct and revivify worn-out subjects. . . . Especially in decorative art, details of a composition realistic or geometric may be progressively replaced by other quite different details until in the end only a trace of the original setting remains." [25]

Let us now seek carefully to apply the principles outlined by Dr. Spinden to Proto-Chimu, Proto-Nasca and Tiahuanaco II arts. We will take up the principles in order. We find, in the transition from Proto-Chimu to Proto-Nasca and to Tiahuanaco II (at Tiahuanaco, on the coast, and at Chavin), that an important part is played by the second aspect of *Simplification.* We have in Proto-Chimu a highly realistic decorative art in which both modelling and painting seek to approach as nearly as possible to the outlines of natural models. The outcome of this seeking is skillful modelling and the correct number of such parts as fingers and toes. In Proto-Nasca art, on the other hand, the principle of simplification finds reaction in the diminishing of the tendency toward modelled representation and of the habit of carefully representing the correct number of fingers and toes. The result is a simplification of the form of the vessels and of the outlines of the hands at the expense of truth. The principle of simplification makes itself still more felt in the transition from Proto-Nasca to Tiahuanaco II. In the former it had only begun to make itself apparent; modelling, of a simplified sort, to be sure, still survived, as did also five-fingered hands. In Tiahuanaco II, however, pottery with modelled forms of men or animals is more rare, though modelling in stone is still found, probably on account of the influence of Tiahuanaco I. But five-fingered hands are here in the minority to a decided degree. Simplification has caused the vanishing of realistic hands from the decoration on the monolithic gateway. The status remains the same in coast Tiahuanaco II. In the greater Chavin stone, however, we find the last result of the influence of the principle of simplification. In this stone the modelling is at its lowest ebb, and the hands, with but three digits here, have lost nearly all semblance to reality, and have become mere elements in the scheme of decoration. Thus we see that simplification leads us, step by step, down the line of the arts of this period—Proto-Chimu, Proto-Nasca, Tiahuanaco II—in the order named, with the Chavin stone as the culmination of its influence.

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[25] Cf. Allen, 1881; Batchelder, 1910; MacCurdy, 1911, 127.

Let us now find out what application the principle of *Elaboration* has to these arts. In Proto-Chimu we found that fangs, eye-painting, animal-masks, animal-disguises and other similar features were represented. Each of these is acted upon by the principle of elaboration. Fangs, it is true, are not a prominent element of Proto-Nasca art. But they appear with great prominence in Tiahuanaco art, both of the mountains and of the coast, and on the Chavin stones they often form an element of decoration of the highest importance. Eye-painting, animal-masks and animal-disguises all survive in Proto-Nasca art and are all more elaborate there than in Proto-Chimu. So much so, in fact, that their development can go but little further, and they almost disappear in Tiahuanaco II art. It may be suggested, however, that eye-painting is elaborated into the tears and tear-lines of Tiahuanaco II art while masking finds a faint elaborate revival in the puma-heads at the mouth of the chief figure on the larger Chavin stone. To show one more manifestation of the influence of elaboration we will mention the "Multiple-headed God" motif of Proto-Nasca art. The God is always distinguished by the manner in which his subsidiary inverted heads proceed from one another's mouths and by the presence of feather-like secondary ornaments. Elaboration results in the multiple-headed figure on the larger Chavin stone. That figure, like its Proto-Nasca prototype, has several inverted heads proceeding from one another's mouths and it is marked by elaborate secondary decoration in the form of feather-like ornaments. We must note here that as nothing of the sort is to be observed at Tiahuanaco the transmission from Proto-Nasca to Chavin must have been direct, and that the two were at least partly contemporary. Likewise, as we have pointed out, there are a number of Proto-Chimu elements found on the Chavin stone. One more evidence of the influence of elaboration should not be ignored. That is the contrast between the staffs found in Proto-Nasca with those in Tiahuanaco II and, above all, in Chavin. The contrast needs no comments, save that here, again, the culmination of the process is found at Chavin.

Nor do we lack for signs of the presence of influences on the part of the principle of *Elimination*. As we have noted, the Proto-Chimu art shows full realistic representation of the whole of men and animals. Between Proto-Chimu and Proto-Nasca we find an elimination of most of the body parts by the latter art. In Tiahuanaco II, however, again probably on account of the influence of Tiahuanaco I, the habit of showing the body is revived, but some of the lines and curves of nature are markedly absent, both in Tiahuanaco II art proper and at Chavin.

Finally, the principle of *Substitution* is readily seen to have been at work. The eye-painting of Proto-Chimu and Proto-Nasca is substituted by the tears and tear-lines of Tiahuanaco II. The puma-head and ribbon-and-stone-ring tabs on the Weeping God's headdress at Tiahuanaco are replaced by the serpent-heads that occupy analogous places on the larger Chavin stone as well as on the lesser one. Again, the fish-like breast ornament of the Tiahuanaco figure finds a substitute at Chavin in the conventional breast ornament of the figure on the larger stone. Once more the culmination of the process is at Chavin. Indeed, in the lesser Chavin stone one may see an excellent example of what MacCurdy describes as "transposition."[26] It is to be observed in the breaking up of the hitherto harmonious and comprehensible design into a chaotic melée of component parts and ill-assorted decorative motifs. One would be but reasonable in thinking the lesser Chavin stone to represent the art-stream, which we have watched so long, at its vanishing point.

Such, then, in very broad outline, is the general trend of the evidence afforded by a study of the application of the four great principles to Proto-Chimu, Proto-Nasca and Tiahuanaco II art.[27] We must now endeavor to interpret the evidence in terms of probable cultural migration. There is not space here to go into a detailed comparative analysis of the minor decorative motifs in Middle American and South American cultures, but the writer is convinced by careful study that the evidence of such an analysis would not differ from that afforded by the broader lines of modification.[28]

To sum up the whole matter briefly, we find that a series of closely related arts is associated in turn with Chimu, Nasca, Tiahuanaco (mountains and coast) and Chavin. We find the art a little older step by step as we go from one of these regions to the next, a little older, that is, in point of development; the age in point of time from our own day decreases as we go up the series of sites. This does not mean, however, that one site was abandoned before the next began to flourish. In fact, the evidence proves that the first and last steps have much in common, and that they must have been at least partly contemporary. The opinion of the writer is that one should conceive of the slowly ageing art as the result of a slow spread of related peoples in several directions during a long time. While the spread was going on new sites were founded and new phases of the common art-ideal developed, but neither the old settlements nor the old phases of art were thereby at once robbed of vigor. What the political status of these people was we shall never know. We must remain content with what evidence we can wring from the vestiges of their culture.

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[26] MacCurdy, 1911, p. 127.

[27] One piece of pottery, reported on by Uhle (1913b, p. 363), almost constitutes in and of itself a proof of the blending or fusion of Proto-Nasca art into Tiahuanaco II art. The vessel in question is a shallow bowl from Tiahuanaco. On the broad rim is painted, in easily recognizable Proto-Nasca style, a serpent, the head of which is strikingly like the puma heads so often found in Tiahuanaco II art. The fact that the vessel comes from Tiahuanaco proves that Proto-Nasca art was carried thither, and the association of it with Tiahuanaco II art on the same vessel proves their close relationship.

[28] The reader's attention is here called to the art of Chiriquí. In many ways strikingly similar both in form and in content to the three early Peruvian arts, the art of Chiriquí is also similar to them in the matter of its development toward conventionalism from realism. It may well be that some day a close connection will be proved between the earliest (realistic) forms of Chiriquí art and the earliest (realistic) forms of Peruvian art. The reader is urged to consult the following works: MacCurdy, 1906, 1911, pp. 127 ff., 1913; Holmes, 1885, 1887; Joyce, 1916, pp. 144 ff.

4. A CRITICAL ANALYSIS OF THE EPIGONAL AND RED-WHITE-BLACK CULTURES.

So far, we have studied three cultures which we have just seen to be intimately linked together by lines of cultural descent. We have hitherto considered a cultural series that spread from the coast to the mountains. We have now come to a fork in that stream.

It is clear from the evidence presented by the architectural remains and by the artifacts that the three cultures so far considered were of a high order. What brought the last of them, the Tiahuanaco II culture, to a close we can but guess at this distant date. It is clear enough, however, that at the end of the Tiahuanaco II period something happened which checked the development of civilization in both mountains and coast. Vague whispers of the cataclysm persisted in the folklore of the country down to Spanish, and even into our own, times. The early chroniclers report the traditions of the event in various ways, none of which needs to be particularized here. In the nature of the case, the character of the catastrophe must have been gigantic in order to bring about the far-reaching results that it did. Whether it was a terrible earthquake, an invasion of savage peoples or some great epidemic of disease or a combination of these things we cannot tell. We only know that in the Titicaca drainage the result was a sudden and very marked lowering of the culture-level, while on the coast and in other regions remote from Lake Titicaca the subsidence in culture, though noticeable, was not so marked. One more thing seems to be disclosed by known facts. As we have seen, Tiahuanaco II art spread far from Tiahuanaco itself. As we shall see, a decadent form of Tiahuanaco II art lingers on around the edges of the old Tiahuanaco "Empire." It is chiefly at Tiahuanaco itself and in the region between Lake Titicaca and Cuzco that the drop in culture is most noticeable. This would seem to indicate that the cataclysm, whatever it was, took place in the mountain regions. The divergence in culture-level that thus sprang up between the mountain regions and the coast resulted in a wide breach between the later arts of the two regions.[29]

The cultures which we are to consider in this section are both coast cultures. The "Epigonal" art is mainly identified with the southern parts of the coast—Pachacamac, Nasca and Ica—where the influence of the Tiahuanaco II period had been strongest. Uhle is the scientist to whom the most credit for the study of this period should be given, and the reader is urged to examine some of his Plates.[30] When we compare Tiahuanaco II art with "Epigonal" we at once see wherein the difference lies. The latter is but an unskillful and decadent attempt to continue the traditions of the former. Again and again it is possible to recognize portions of well-remembered Tiahuanaco II motifs on "Epigonal" artifacts, but always the latter are far inferior to their prototype in both line and color. So close is the resemblance sometimes that one would be tempted to say that the "Epigonal" things were indeed made in the Tiahuanaco II period, but by unskilled artists. This, however, is interdicted by the irrefutable stratigraphic evidence. The "Epigonal" wares and textiles occur in later strata than the Tiahuanaco II artifacts. The Weeping God, the puma-heads, the bird-figures and many other Tiahuanaco II motifs occur again in "Epigonal" art.

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[29] The author thinks that it is only fair to warn his reader here that the explanation offered to account for the marked lack of connection between Tiahuanaco II art and Inca art is open to a number of objections. In the first place, if Tiahuanaco II influence did spread into the Cuzco region, it must inevitably have left its stamp upon the art of that region. Archaeology does not permit us to deny that Tiahuanaco II art did spread to Cuzco,—and far beyond it. Why, then, is there so little of Tiahuanaco influence in Cuzco or Inca art? Why is there not at Cuzco, as at Titicaca, Koati and Tiahuanaco, an intermediate type of art which, though much lower in grade than Tiahuanaco II art, still preserves some vestiges of the old tradition? If the forces that brought the Tiahuanaco II art in the Titicaca drainage to an end were unable completely to obliterate the older style of that region, why were they so much stronger at Cuzco than at Tiahuanaco that they were able to wipe out completely the older art? An answer to these three questions, which were suggested by Dr. Roland B. Dixon, may perhaps be found in the study of the distribution in Peru of the type of culture represented by the Colla-Chulpa type. An examination of this distribution shows that Colla-Chulpa culture, or something very like it, is found throughout the Peruvian highlands from Bolivia to Cuelap in Chachapoyas. It is not like the coast cultures of the time (that is, the period just before the rise of the Incas). Place-names, it is true, have a character remotely suggestive of the coast, but this may have been the result of Inca *mitimaes* (transferred colonies).

Closely associated with the "Epigonal" art is another art-type which, for want of a better name, we call red-white-black ware after the colors in which it is painted. This type is associated with the coast from Pachacamac northwards to Trujillo (Chimu) and even beyond; it occurs in the same strata with "Epigonal" at Pachacamac, which proves the approximate contemporaneity of the two. Our Plate XI, Figures 1 and 2, shows two excellent examples of this ware. The originals, in the Peabody Museum, Cambridge, Mass., came from Recuay, northern coast region. The colors are red, white and black. In Figure 1 we see a dragon-like figure that is very distinctive of this site. As Joyce points out,[31] it is very similar to a motif found on some Proto-Chimu vases, and a crude derivative of it appears in northwestern Argentina. In the face that adorns the front of the vessel's neck we perceive a very strong tinge of Proto-Chimu tradition. The ear-plugs and headdress are both reminiscent of the analogous portions of the vase shown in Plate I, Figure 2. A great deal less skill in modelling is shown, however.

To sum up the features of the "Epigonal" and red-white-black arts, we may say that each flourished in the area in which the previous culture from which it derived most of its characteristics had flourished. This explains why "Epigonal" art, which differs from Tiahuanaco II only in its imperfection, throve in the region where Tiahuanaco II had been at its best, and why red-white-black art, similar in many respects to Proto-Chimu, existed in the same territory as the latter. On the whole, this period was one of stagnation. At any rate, nothing appears to have been done to advance the development of art in Peru.

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[30] Uhle, 1903, Plates V and VI.

[31] Joyce, 1912, p. 183.

Of what went on in the mountains during this period we know absolutely nothing. Perhaps the shock caused by the putative cataclysm had been so great as to result in a state of affairs almost verging on savagery. There is a possibility that it was at the beginning of this period that the very low-cultured Urus entered the Titicaca basin. They came from the south.[32]

5. CRITICAL ANALYSIS OF THE CHIMU AND NASCA CULTURES.

As we have already noted, we know something definite in regard to the political, social and ethnological aspects of the people of this period. It will be our task in the present section to study their art, and in doing so we shall observe several close similarities between this coast-culture and the Proto-Chimu and Proto-Nasca cultures. We can but hope that the close artistic correspondence between the two is a token of social correspondence.

The distinctive ware of the Chimu period is the black ware that comes from the northern half of the coast and from various regions here and there in the highlands. Though the ware in question has a wide distribution, one may generalize by saying that it is especially distinctive of the northern half of the coast.

In Plate XI, Figures 3, 4, 5, and 6, are shown four very good specimens of the type. The originals are all in the Peabody Museum, Cambridge, Mass. Besides the fact that the vessels are made of black clay, another new and distinctive feature presents itself. This is the important part played by bas-relief in the decoration of the vessels. In every case, the technique is the same square-edged variety that is to be noted in the bas-reliefs on the monolithic gateway. This similarity may or may not be significant. In the case of Figure 5 modelling in the round also plays an important part, and the human head with its large fan-shaped headdress recalls some of the figures of Proto-Chimu art. A further development of this headdress is seen on some of the specimens in the American Museum of Natural History. The development takes the form of the addition of great plume-like ornaments that rise in a curve from the headdress and fall down on both sides of the wearer's face. In decorations with this motif there is to be observed a very marked residue of the old Tiahuanaco II tendency toward bilateral symmetry, and also a number of other criteria typical of that period. For example, one vessel in the New York collection shows a personage with a perfectly symmetrical plumed helmet who is holding two staves or weapons in his symmetrically arranged four-digit hands. Indeed, four-digit hands are by no means uncommon in this period. It was a tendency inherited from the previous periods. A great many vessels however, like Figure 4, show no such symmetry and lack entirely any seeming resemblance to Tiahuanaco II art. Indeed, the anthropomorphic figure on that flask seems to be in the clutches of a creature more closely resembling the dragon-like animal we noticed in connection with the red-white-black ware than anything else. Again, there is a large class of black ware vessels like Figures 3 and 6 totally devoid of either anthropomorphic or zoomorphic decoration.

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[32] Chamberlain, 1910, pp. 417 ff.; Bandelier, 1910, pp. 36 ff.; Garcilasso, II, pp. 224 ff.; Balboa, 1840, Chap. XI; Boman, 1908, p. 71; Polo, 1901.

If skill in modelling is one of the strong points of Proto-Chimu art, it is so of Chimu art as well. Evidence of this is given by the large class of "portraits" in both black ware and in red ware. Above all, the modelled vessels representing peanuts, potatoes, *guanacates,* squash, *paltas,* and other vegetables and fruits are especially eloquent of the high artistic capabilities of the potters in the Chimu period. These vessels are adorned with modelled forms which, except in the matter of color, are absolutely true to nature.

All this does not mean to imply that the Chimu people used solely this black clay for their vessels. The black is emphasized merely because it is the most predominant and characteristic. Red clay painted in white slip was used, but it lacked the excellence and the diversity, as well as some of the distinguishing motifs, of the Proto-Chimu pottery. As we have said, "portraits" continued to be produced in this period, and we find them in both black ware and red. It is often difficult definitely to assign a "portrait" to one or the other of the two possible periods.

Still other striking products of this period were the textiles and the stucco wall-decorations derived from them. In Plate XII, Figures 1 and 2, we see reproductions of textiles of this period. Brighter colored cloths with animal and human figures combined with conventional ones were also fairly common. There is, however, nothing especially new about them, and we would better take up the very remarkable architectural achievements of the period. Only by referring to Rivero and von Tschudi and to Squier can one get a really adequate view of the wonderful city of the Chimu kings.[33] Great walls thirty feet in height and ten feet thick at base by five feet thick near the top are distinguishing features of one type of ruins of the Chimu period. Another type does not have a tapering cross-section. Adobe is the usual material, of course, and it was one which lent itself admirably to the construction of a huge city of dwellings, canals, reservoirs, gardens and palaces. The interior surfaces of some of the walls are decorated with arabesques in stucco which arouse hearty admiration in the beholder. Squier gives numerous pictures of the various specimens of arabesque. We will content ourselves with noting three main classes of arabesque. The simplest type is that of the three specimens shown by Squier (1877, p. 154 f.), as consisting of lozenge-shaped depressions, or square ones, let into the surface of the wall in such a way as to form a lattice or checker-board pattern. In the same class, but a bit more elaborate, is the design which consists of a raised pattern in the form of a double line of stair-sign design.[34] The second type, while still largely geometric, is obviously derived directly from textiles of the type shown in Plate XII, Figure 1. The technique, as in the case of the simplest type, is of the square-edged variety.[35] It combines, like the textile-type with which it is related, a mingling of geometric with zoomorphic elements. The third and final type might be described as curvilinear on account of the predominance of curved lines. In this type zoomorphic and anthropomorphic elements play a very important part. One decoration of this final type seems to be of a simpler nature than one other. It is made up of a series of large hollow squares in stucco relief. Below them are some extraordinary figures resembling conventionalized tapirs. These figures have their "probosces" down and their "legs" to the observer's right with their arched "backs" on the left. There are two of them under each square.[36] One is at a loss to explain this combination of motifs and likewise the motifs themselves. More comprehensible is the other specimen of this type. It is distinguished by a very rich composition (still in the square-edged technique) made up of conventionalized men, birds, fishes, crabs, lobsters and other such things. It is plainly the work of a people who were closely in contact with the sea. Two things are very interesting in connection with the human figures, namely, that they wear precisely the same headdress as the figures already described as occurring on the pottery of this period, and that, like those figures, they have less than the real number of digits. The crabs and lobsters in the design are almost life-like. Interwoven with these elements is another one which is like nothing else in Peruvian art. It is a curving device not unlike a W on which are shown some of the animals referred to. The reader is urged to turn to Plate XVI in Joyce (1912) for an adequate presentation of this remarkable design.

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[33] Rivero y von Tschudi, 1851, pp. 268 ff.; Squier, 1877, pp. 135-192.

[34] Cf. Middendorf, 1894-95, II, pp. 375 ff.

[35] Squier, 1877, p. 137.

To sum up, then, our impressions of Chimu art, we will say that it bears a general and marked resemblance to the Proto-Chimu, both in the subject-matter and in the treatment. As is only natural, there are accretions from the intervening arts, new motifs and a new tendency to use dark-colored clay for vessels. Likewise, it is not difficult to see in the remarkable wall-decorations of this period an attempt to continue the tradition of richly carved ornament found to be so prominent in Tiahuanaco II art. The choice of material—stucco—is easy to explain on the ground that the coast people were already used to stucco as a wall-coating and that suitable stone for the purpose of carving into bas-reliefs was scarce on the coast.

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[36] See Squier, 1877, p. 154.

Let us now turn to a brief examination of the same period further down the coast, designated by the name of Nasca. The reader is urged to consult Uhle, 1913b. The tradition of rich coloring noticed hitherto in the southern coast-region did not die out with the Tiahuanaco period. As we have already seen, the Epigonal period carried on the forms of Tiahuanaco art to the point where they were on the verge of falling to pieces as the direct result of too-long repetition. The last pre-Inca period of the southern coast exhibits an art which derives its color from both the Proto-Nasca and the Tiahuanaco periods and which still preserves a few of the motifs that mark the latter art. Look, for example, at Plate X, Figure 9 of Uhle, 1913b. On the vessel there shown the reader will notice a bird-figure which is considerably like the bird-figures in Tiahuanaco art or in Epigonal. All the other motifs on the vessel, however, are new, and they are distinctive of the period we are now studying. At the same time, the matter of pottery forms is an interesting one. Besides the more usual bowls and dishes, Nasca art shows a new pottery form, namely, the large globular vessel with a fairly wide flaring neck. In most cases, it should be noted, the body of the vessel has a slight tendency to be oval rather than spherical. In the Inca period this tendency becomes emphatic, in the Nasca region, as we shall see. The textiles of this period are practically all adorned with geometric designs. Our old friend the "stair-sign" is a motif that is often found. Color in the textiles becomes duller.

To sum up the period just before the Inca period on the coast in one sentence we may say that the northern half of the littoral preserved the old tendency toward modelled forms in pottery and toward animal forms in textile-designs, and, at the same time, that the southern half of the coast continued to make many-colored pottery although both the pottery and the textiles show a preponderance of geometric forms over life forms. In both parts of the coast it was essentially a period in which creative forces of the race's imagination were at a low ebb. This may be indicative of the state of affairs in other branches of human activity at that time. The old culture of Tiahuanaco had died away from some shock at the centre and the communities on the coast that had been dependent on it for artistic stimulation fell into a period of stagnation which was only brought to a close by the Inca invasion.

6. A CRITICAL ANALYSIS OF LATE INCA OR CUZCO ART.

In Inca art we come to the last phase of aboriginal art in Peru, Ecuador, Bolivia, Chile and Argentina. As the type from which all variants of the Inca types were derived was peculiar to Cuzco and its region, we will examine the art of that district before tracing its spread over the wide area it eventually covered. As we have noted before, the collection of pottery and other artifacts made by the various Yale Peruvian Expeditions in the Cuzco region is the most representative collection of Cuzco pottery now in this country. The articles by Dr. Bingham show excellently well the nature of the site in which most of these things were found.[37] Important also for our purposes, is the recent publication by Dr. Eaton.[38] The evidence presented by him proves conclusively that most of the burials at Machu Picchu are relatively recent, probably dating not farther back than sixty or eighty years before the Conquest. Since this is so, we must assume that the artifacts from there are also recent. None have been found that are pre-Inca.

Besides the Yale collection, that in Berlin and that of Dr. Caparo Muñiz at Cuzco are the best two.[39] It will be well to note that the late Inca period which we are now to discuss includes the reigns of the last three unmolested Incas: Pachacutec, Tupac Yupanqui and Huayna Capac. The period began, probably, somewhat after 1400. When Inca Pachacutec assumed the red fringe of sovereignty the Inca dominion already included most of the territory between Chincha and Huánuco on the north and Arica and Tucuman on the south. It was extended by Pachacutec and his successors so as to include all the territory between the northern part of the modern Ecuador and the River Maule in Chile and between the ocean and the montaña or forest-region. In the last days just before the Spanish conquest, when the ill-fated Atahualpa was Inca, Quito, Cajamarca, Cuzco and the island of Titicaca were the chief centres of importance. Cuzco still remained the capital.[40]

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[37] Bingham, 1913, 1915, 1915b, 1916.

[38] Eaton, 1916.

[39] Seler, 1893.

[40] Cf. Means, 1917; Pedro Sancho, 1840.

We will first discuss the matter of forms in Cuzco (i. e. Inca) pottery before taking up that of decorative motifs. First comes the stately aryballus, at once the most typical Cuzco form and the most universally adopted one wherever Inca power penetrated. Our Plate XIII shows two good examples of this type. There are several sub-types of aryballi. A tentative classification is to be offered later. Next in order of frequency of occurrence come the beaker type, shown in Plate XV, Figure 2, the pelike type, Plate XIV, Figure 1, the bowl, dish and numerous other forms.

In the matter of decoration we find that the geometric figures are in a large majority over anthropomorphic or zoomorphic ones. At the same time, modelled ornament, save for the universal cat's-head nubbin, is found to be essentially foreign to Inca pottery. It does occur, of course, but it is an extraneous element. (Plate XIV, Figure 3; Plate XV, Figures 3 and 4.) By far the greater part of Inca pottery decorations are made up of combinations of a comparatively small number of motifs. We will describe several of these. One of the most widespread is that seen in Plate XIII, Figure 1. An old Indian at Cuzco told the writer that the design represented a conventionalized *quipu* or knot-record and that the design was applied particularly to the vessels of the *quipucamayoc* who looked after the *quipus.* Without accepting this as an absolute fact, we will call this design the "quipu-motif." Another frequently seen motif is the meander (Plate XIII, Figure 2). A third is the lines-and-cross motif (Plate XIV, Figure 1). A fourth we will call the "diamond motif" (Plate XIV, Figure 3). A fifth might be described as the "saw-tooth motif" (Plate XIV, Figure 3). There are numerous other motifs that might be enumerated if space permitted, but the five named are the commonest and one rarely finds a vessel of Inca type that has not at least one of them upon it. In regard to color the Inca or Cuzco type is rather sombre. Black, dark brown, light brown, red and some white are the usual tints.

Cuzco types tend to vary but little from the original model. Nevertheless, local variations do occur in several regions, and in the Inca pottery at Cuzco itself marked influences from the arts of subjugated peoples are to be seen. We shall take up in turn our consideration of these departures from the usual type.

It may be said that the Inca dominion spread first south then north. The Inca artifacts found in northern sites are, on that account, likely to be more recent than those found in the southern sites. In Argentina and Chile Inca vessels are frequently met with. Boman (1908, I, Plate X) shows two aryballi from Lapaya in north-western Argentina. The shape of the vessels and the arrangement of handles and nubbins are exactly the same as in vessels from Cuzco or Machu Picchu. The pattern on the better of the two pots is divided into two motifs which are the "diamond motif" in two forms, and a debased form of the "saw-tooth motif." Boman's Plates XI and XIV (vol. I) show other Cuzco-type vessels from Lapaya which do not call for special mention. His Plate XVIII (vol. I) shows two aryballi from the Argentine site of Lerma. One shows the "saw-tooth motif" and the "diamond motif." The other combines a perfect Cuzco shape with a well-modelled snake whose head is near the neck of the vessel and slightly raised as if to strike. In general, then, these designs, though obviously derived directly from Cuzco prototypes and totally unrelated to any other Peruvian art, are marred in some cases by a crudeness and uncertainty of execution that may, perhaps, be attributed to a lack of skill on the part of local makers. An examination of Cuzco pottery from Chilean sites reveals a similar situation. Oyarzún (1910, p. 363 ff.) shows six Inca or Cuzco aryballi from places in northern Chile. In three cases both shape and decoration are of the best Cuzco style, but in the other three the designs, though derived directly from Inca ones, are crude in point of execution. Turning our attention to Ecuadorian sites we find that the state of affairs is much the same as in the far south of the Inca dominion. Dorsey (1901, Plate XLII) shows a fine Inca aryballus from the island of La Plata in the Bay of Guayaquil. It is exactly of the same shape as the Cuzco of Machu Picchu vessels and it is adorned with the "quipu motif." Bamps (1879, Plates II, III, and IV) shows many Inca vessels from points further north and east in Ecuador. Again, both in shape and in the execution of the designs, these vessels could not be told apart from similar ones from Cuzco or Machu Picchu. So far as archaeological work has thus far shown, the potters of the north were more successful in their attempts to copy the Cuzco style than were those of the south. We should bear in mind, however, the likelihood that cruder specimens of vessels of the Inca type have not been reported on. A vessel from Ibarra, Ecuador, is noteworthy in this connection. It is shown by Seler (1893, Plate 48, Figure 20). It is an aryballus, but the graceful shape of the prototype is not preserved in this copy; the flowing line that, in the Cuzco vessels, merges the neck with the body is here broken by a pronounced shoulder. The decoration, however, combines the "quipu motif" with the "diamond motif."

It may seem odd at first that the widest divergences from the Cuzco standard do not occur in the regions furthest from Cuzco. Pachacamac and Ica are the two sites which show the most strongly localized arts. The reader is urged to consult Uhle's publications on this point.[41] In the period that preceded the Inca period at Pachacamac, as we have seen, the people made a great number of black clay vessels with one-handled globular bodies and necks adorned with rather coarsely modelled human faces. The combination of this art with Inca vessels of the aryballus type resulted at Pachacamac in giving two handles to the vessels and in adding paint to the modelled face. We should not fail to note that in many cases where the hands appear in the Inca vessels they have five fingers. This emphasizes the breaking away from the old Tiahuanaco tradition. At Ica, as we have previously observed, large vessels of a slightly oval shape were made in the last pre-Inca period. These develop into a definitely egg-shaped or cask-shaped type decorated sometimes with Inca motifs and sometimes with Nasca motifs.

This brings us to the consideration of the other type of variation from the Cuzco standard. It is the class of variation which consists in a manifestation of the influence of local pre-Inca arts on the Cuzco type. The reader has just seen the effect that Inca art had upon the modelled black ware of the coast. He is now asked to turn his attention to its corollary, the type which shows the influence of the black ware of the coast upon the Cuzco types. In Plate XV, Figure 4, we have an excellent specimen of this class. Though both come from Machu Picchu, Figure 3 may well be the coast-form which served as a model for the other. In both examples there is but one handle, and the general shape is the same in both. Figure 4, however, is definitely associated with Inca art by the "quipu motif" on its body.

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[41] Uhle, 1903, Plates VIII and XIII, 1913b, Plate X.

We will now draw up a classification of Inca pottery on a basis of form and decoration:

- Type I Large open-necked vessels (often painted with geometric designs).
  - a Deep bowls without handles (Seler, 1893, Plate I).
  - b Various types with handles gradually approaching aryballus.
- Type II Aryballus type. Narrow neck, two handles and nubbin.
  - a With geometric designs only.
  - b With painted designs both geometric and animal.
  - c With modelled anthropomorphic element and painted design in combination.
  - d Miscellaneous sub-types.
- Type III Plates, bowls, braziers, cups, etc.
  - a With geometric designs.
  - b With animal or human designs.
  - c With both.
- Type IV Miscellaneous beakers, bottles and pots.

We must now turn our attention to the question of Inca or Cuzco textiles. To the modern eye they appear the most beautiful of all Peruvian textiles. As we shall see, however, they are not technically so wonderful as the Proto-Nasca embroideries. Plates XVI and XVII show four typical Inca textiles. A glance will show the reader that those on Plate XVI are of a very different type from the other two. They come from the island of Titicaca, and the originals are in the American Museum of Natural History, New York. In Plate XVI it is seen that the decorative tendency is to break the surface up into small patches of color. This same tendency may be remarked on Inca pottery from the same site. The number of decorative motifs is too great to dwell upon at length; we shall have to content ourselves with noting that the motif which consists in a slanting band ended off by two squares each containing a dot, which squares are repeated on each side of the band, occurs on an Inca cloth from Ica.[42] Variants of the "saw-tooth motif" and of the "diamond motif" are present in each of these ponchos, recalling the Inca pottery. Both also show the frequent use of rectilinear spirals. Plate XVII, Figure 1, is also a poncho from the island of Titicaca. It is in several shades of red and has a white cruciform figure much like that on the cask-shaped vessel from Ica shown by Uhle (1913b, Plate X, A). Figure 2 comes from the coast and shows a slight influence, in the form of cat-like figures, from the Chimu period.

We must now summarize our impressions of Inca art. We may do so by saying that geometric decoration has a great preponderance over animal or human motifs. While Inca pottery derives most of its charm from its graceful form, it is by no means to be despised because it has not a great range of color. The designs are usually simple but pleasing, and in most cases they are peculiar to Inca art. In the textiles the same tendency toward geometric designs is to be noted, although here again other elements do occasionally play a part. In general, the color of the textiles is brighter and more various than that of the pottery.

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[42] Uhle, 1913b, p. 344.

IV. THE QUESTION OF CHRONOLOGY AND DATES IN EARLY PERUVIAN ART

As was said at the beginning of the paper, the writer, after surveying the development of art in ancient Peru, wishes to present a date-chronology of the various cultures. The dates here to be presented are only approximate. In the nature of things, we must be prepared to allow for an error of a century or more in the remoter epochs.

It is necessary that a word should be said as to the methods employed in drawing up the chronology. In the total lack of all written records of any sort we have to meet a great obstacle. This is partly overcome by certain things which we will speak of soon. Moreover, tradition, which sometimes does much to aid in the establishment of an approximate chronology, is here limited almost wholly to the Inca period. These are the chief disadvantages to be met with. We will now examine the conditions which are more favorable to our end.

In trying to construct a date-chronology for the various higher cultures of the Andean region, one must bear in mind that it is inherently improbable that the cultures of South America possess an antiquity greater than those of Middle America. The researches of Dr. Hrdlička have clearly shown this improbability. He has shown four very important truths: (1) Man is zoologically a newcomer in this hemisphere; (2) Man, when he arrived on this continent, was in a stage of culture "superior to that of the late Pleistocene"; (3) Man, since arriving in this hemisphere, has inevitably undergone certain secondary modifications as to physical type and culture; (4) There exists to-day in northeastern Asia a racial element that is descended from the same ancestors as the American Indians.[1]

Since, from the point of view of the zoologist, Man is an Old World animal that reached America by way of Siberia and the Aleutian Islands, it must be assumed that the northern parts of the continent were peopled sooner than the southern parts. This supposition applies to any tribes, no matter what their cultural grade may be. Nor is mythology lacking in indications of the southwardly shift of the high-cultured people of the west coast of South America. In the face of all this, then, the *onus probandi* rests upon him who would maintain that the South American populations are older than the North American or Middle American.[2]

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[1] Cf. Hrdlička, 1912, 1912b, 1912c, 1912d.

Let us, then, assume for the purposes of the present discussion that Man entered America from the north and slowly spread southward. The primary migrations of Man in America have a southward trend. His secondary migrations often do not. In the Middle American region (Mexico, Yucatan, Guatemala, Honduras, Salvador, Nicaragua, Costa Rica and Panama) we have a number of very high cultures. Those of Mexico and Yucatan are, in many respects, as high or higher than those we have been studying. Up to about 752 A. D. all is vague and uncertain as to cultural events in Mexico. In or about that year, however, the Toltecs founded Tula.[3] More important for us is the cultural type described by Tozzer as "archaic." It is much older than the Toltec culture and much more widespread. Indeed, we may say that the archaic type occurs scatteringly from the valley of Mexico down to Panama.[4] It will perhaps be proved to be the ancestor of most of the later high cultures of Middle and South America. At any rate, the meager seven centuries from the founding of Tula to the Spanish conquest is obviously not long enough to account for the development and wide distribution of the calendar-system and the various related dialects in Middle America. We must assume that the people of the archaic period flourished long before the time when the earliest high cultures of Middle America began to develop their own peculiarities, peculiarities which, however, never succeeded in blotting out the fact that all the cultures had a common origin.[5]

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[2] This is not the place to go into the question of geologically ancient man in America. Those who wish to do so are urged to read Hrdlička, 1912, and the numerous works listed in the Bibliography of that publication. All that it is necessary to say here is that Hrdlička has shown the extreme unlikelihood of the existence of any of the morphologically primitive types of men in America.

[3] Tozzer, 1916, p. 464.

[4] Tozzer, 1916, p. 466; Spinden, 1915; see Appendix for discussion of "archaic type."

[5] Means, 1917.

In Yucatan we can fairly carry the beginning of protohistory back many centuries. This is largely due to the work of Mr. Bowditch and to that of Mr. Morley.[6] As the present writer has explained elsewhere, the difference between the chronologies of these two authors is neither serious nor great. The earliest dated Maya remains are, respectively, the Tuxtla statuette and the Leyden plate. The former bears the Maya date 8.6.2.4.17 (about 100 B. C.); the date on the latter is 8.14.3.1.12 (about 40 A. D.).[7] In spite of the fact that these inscriptions are so early, the system in which the dates are set down is absolutely the same as that in which those of the "Old Empire" cities in southern Yucatan are written. The significance of this is, of course, that even so early as 100 B. C. the Mayas had gone through the centuries-long process of evolving their calendar system. We must postulate, in Mr. Morley's opinion, at least a thousand years of preparatory development.[8] This period of development should be understood to include the migrations of the various branches of the original stock to the place in which they are found in later eras. From about the time of Christ to the end of the seventh century the "Old Empire" of the Mayas was running its course. From then to the middle of the fifteenth century the "Transitional Period" and "New Empire" rose and fell.

We will now summarize the chronological conditions known to be true of Middle America. For at least eleven centuries before Christ various migrations (mainly southward) were accompanied by the steady development of individual cultures, all variants of a common origin, albeit influenced by environmental and psychological conditions. By the time of Christ, the high cultures of Middle America had almost crystallized into their final forms.

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[6] Bowditch, 1901; Morley, 1910, 1915; Means, 1917b, p. 3.

[7] While on his most recent expedition for the Carnegie Institution of Washington, Mr. Morley discovered an important site in northern Guatemala. He gave it the name of Uaxactun—Eight-stone—because he found there a large stela bearing the Maya date, 8.14.10.13.15, equal to about 50 A. D. Another inscription at that site may possibly be eighth cycle, also. We have, consequently, at least three inscriptions dating from 50 A. D. or earlier. (Information given by Mr. Morley to the writer.)

[8] Morley, 1915, p. 194-196; Holmes, 1916.

In South America, what do we find? We find a series of cultures following one another in logical succession. We find that the earliest are the most like the Middle American cultures. We find, besides, two independent criteria which enable us to build up an approximate chronology. Each will be described in turn.

The list of "kings" of Peru given by Fernando Montesinos on the authority of Blas Valera has only lately begun to receive the attention it merits.[9] While it emphatically cannot be accepted as real history, it is, nevertheless, important as indicating that popular legend in the time of the Incas preserved the memory of many generations of rulers. Counting the Incas, the "kings" on the list number 102. Markham, an accomplished historian in other fields as well as in the Peruvian, considers that 27 years is a fair average for the length of a reign. Accepting this in its totality for the nonce, we find that the list of rulers is thought by Montesinos to cover a period of 2,754 years, or, in other words, that the first ruler flourished about 1224 B. C. (1530 A. D. minus 2,754). This date, then, is the very earliest that even Montesinos is willing to accept. Everyone will agree that this date is hardly tenable. As Markham says (1912, p. 41), we must allow for repetitions, overlappings and other errors. Let us, then, be conservative and consider that there were but seventy reigns. This gives us about 1,900 years as the period covered by the list, and it puts the earliest ruler about 350 B. C. Sir Clements Markham (loc. cit.) prefers the initial date 200 B. C. We may say, then, that in all probability, the earliest "king" of Tiahuanaco I (it was of the mountain races that Montesinos wrote) flourished about 200 B. C. Probably, however, culture was low and local for many generations. We find that the "first dynasty" of Montesinos is frequently marked by the name Pirua. It consists of eighteen rulers. Let us call it fifteen; $15 \times 27 = 405$ years; or, in other words, the Pirua "dynasty" came to a close about 200 A. D. Was not this perhaps the end of the Tiahuanaco I period? The next "dynasty" is marked by the name Amauta in many cases. Montesinos gives it forty-five rulers. Let us call it thirty; $30 \times 27 = 810$; this brings us up to about 1000 A. D. This date, however, does not fit well with known historical facts. Let us, then, say that the Amauta "dynasty" (perhaps of Tiahuanaco II) flourished from about 200-900 A. D. Montesinos calls the dark period that followed the Amauta "dynasty" the "Tampu Tocco period." In it we may see our Colla-Chulpa period. He gives it twenty-seven rulers. Let us call it ten; 10 × 27 = 270 years; or, to put it differently, the dark period began to draw to a close about 1170 A. D. This brings us to the threshold of the Inca period. The late Dr. Gonzalez de la Rosa constructed a date-chronology of the Inca period which seems to the writer wholly acceptable. A modified version of it is given here.[10]

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[9] Montesinos, 1840, 1882; Markham, 1912, p. 303 ff.

REIGNS OF THE INCAS, ACCORDING TO
DR. GONZALEZ DE LA ROSA.

Sinchi Rocca	1134–1197
Lloque Yupanqui	1197–1246
Mayta Capac	1246–1276
Capac Yupanqui	1276–1321
Inca Rocca	1321–1348
Yahuar Huaccac	1348–1370
Viracocha	1370–1425
Pachacutec	1425–1478
Tupac Yupanqui	1478–1488
Huayna Capac	1488–1525

It may be more satisfactory to some to reduce the thing to round numbers, thus: Viracocha, 1370-1420; Pachacutec, 1420-1480; Tupac Yupanqui, 1480-1490; Huayna Capac, 1490-1525. Either step will result in a fairly accurate basis on which to fix one's idea of the reign-periods.

So much, then, for one of our two criteria. It has been noted that this one concerns the mountain region primarily. The other is important for the coast cultures. It is unfortunate that it has not yet been fully studied.

The islands off the coast of Peru have long been famous for their deposits of *guano*. These lie in masses of enormous thickness. Markham says that two and one-half feet a century is approximately the rate of accumulation. The rate no doubt fluctuated slightly, but the careful investigations made by Markham have led him to accept the above rate as a fair average. According to Gonzalez de la Rosa, antiquities occur in the guano at depths varying from nine feet to forty or more.[11] This means that in 1870 (at which date the investigations were made) the antiquities presumably varied in age from about four centuries (i. e. 9 feet gives a date of about 1450) to about sixteen centuries (i. e. 40 feet gives a date roughly equal to 200 A. D.). Perhaps future work will yield more detailed information as to which cultures are found at various depths in the guano. At all events, it seems possible that for want of a better criterion we must bear the evidence of the guano deposits in mind.

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[10] Gonzalez de la Rosa, 1909; Means, 1917, p. 244.

It is now well for us to summarize and tabulate the general results of the evidence brought out by the foregoing discussion. Once again the reader is asked to remember that the dates here offered claim to be no more than roughly approximate guides to the imagination.

AN APPROXIMATE CHRONOLOGY OF THE EARLY CULTURES OF PERU.[12]

Mountain Regions	*Coast Regions*	*Dates*
Primary Migrations Tiahuanaco I	Primary Migrations and Proto-Chimu and Proto-Nasca	? –200 A. D.
Tiahuanaco II	Coast Tiahuanaco II, followed by "Epigonal" and red-white-black wares	200–900
Colla-Chulpa period (called "Tampu Tocco" by Montesinos)	Continuance of above styles	900–1100
Early Inca	Chimu and Nasca	1100–1400
Late Inca dominion approaching its zenith		1400–1530

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[11] Gonzalez de la Rosa, 1908.

[12] The reader is particularly reminded that there is much evidence to show that Proto-Chimu, Proto-Nasca and Tiahuanaco I all contributed

This brings us to the end of our subject. When, in 1531, the Spanish conquest of Peru began, the Inca dominion—Ttahuantin-suyu—was being torn to pieces by a civil war between the legitimate ruler, Huascar and the usurper Atahualpa. Subsequent evolution in Peruvian Art lies beyond the scope of the present work.

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towards the formation of Tiahuanaco II. Moreover, as Tiahuanaco II art grew older it became more and more complex, spreading, at the same time, into regions very far away from Tiahuanaco itself. The fact that the specimens of Tiahuanaco II art from the more distant regions often show the admixture of elements taken over directly and bodily from Proto-Chimu and Proto-Nasca art, shows that, even when Tiahuanaco II was approaching its end, the two early coast arts were still vigorous. The dates on the above table, therefore, should not be regarded as the *terminal* dates of the culture periods, but as the *approximate dates at which each was at its strongest development.*

APPENDIX I: THE ARCHAIC TYPE.

Dr. Herbert J. Spinden kindly wrote at the writer's request this summary of his views as to the significance of the "archaic type."

"An archaic culture allied to that of Mexico and Central America seems once to have spread across Colombia and Ecuador to the coast of Peru. In Peru the culture has not been isolated in pure form—if we may use this chemical phrase in archaeology—unless it should prove to be that which Uhle briefly describes from the earliest shell-heap remains at Ancon. He figures several heads that resemble very closely those of the lowermost horizon in Mexico and he finds associated with them pottery characterized by incised and plastic decoration.[1] It need hardly be pointed out that the pottery of the Archaic horizon in the north is also characterized by plastic decoration and that when incised or painted decorations occur the designs are exceedingly simple. Highly "conventional" designs based upon an animal motive are not found in the truly archaic, but are characteristic of the second crop of cultures after religion and ceremony had developed to the point that it could react strongly upon art.

"But in the absence of other data we may be permitted to rest our theory upon the presence in the coastal region of Peru of figurines presumably related to those of the Archaic horizon although found among the products of a later time. At Ancon, and at other sites as well, are found nude female figurines with the short stubby arms that are so characteristic of the products of the Archaic horizon from Mexico to Colombia. These figurines are usually moulded rather than modeled and it seems unlikely that moulds came into use until the upper archaic or even later. The standing pose is more common than the sitting one. In the American Museum collections there are perhaps twenty-five examples of these figurines, and others are reproduced by Putnam.[2]

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[1] Uhle, 1912, pp. 22-45.

[2] Putnam, 1914, Plate XIX.

"In addition to female figurines there are many examples of pottery vessels from Ancon, Trujillo, etc., in which a human figure is represented in a fashion that harks back to the archaic, namely with the elbows and knees both flexed and the former directly over the latter. Of course, in the cases of both the figurines and the vessels the qualities peculiar to Peruvian art had already become set.

"The theoretical considerations that connect the spread of archaic ceramic art with the spread of agriculture are very strong. No one can get away from the fact that maize, beans and squashes constitute four species (Zea mays, Phaseolus vulgaris, Cucurbita maxima, and C. pepo) wherever agriculture is found in America. The Lima bean (Phaseolus lunatus) had a more restricted use.

"It seems not unreasonable to suppose that careful research will bring to light more evidence on the occurrence of figurines of early type. These objects may have been neglected in favor of those of greater artistic interest. For instance, Dorsey, in discussing the finds on the Island of La Plata, says:—

" 'Practically all this pottery was in fragments, only two pieces were found in perfect condition. With the exception of not more than a dozen pieces, all the fragments were parts of small images in the form of human figures. . . . From fragments representing perhaps a thousand images not more than half a dozen pieces were found which bore any trace of paint. . . . All the pottery, with a very few exceptions, is hand made; that is, it was not made in a mould, which was commonly employed on the mainland of Ecuador and throughout a large extent of Peru.'[3]

"Many of the fragments figured by Dorsey are distinctly archaic in treatment. Of course it might be argued that the archaism is absolute rather than relative but a comparison of special features gives ample evidence of transitions from one region to the next."

To these remarks by Dr. Spinden the writer would like to add a few of his own.

As has been said, the "archaic type" is stratigraphically the earliest in Middle America. Therefore, if it does occur in South

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[3] Dorsey, G. A., 1901, pp. 266-267.

America it must be expected to be the earliest there also. If one is to believe that the "archaic type" was a very early type which spread all over the northern half of Latin America, must not one also assume that the various later cultures were developed from it in the several regions involved? Such a development would occur after religion and ceremony had gained considerably in strength, as Dr. Spinden says. On the other hand, if the "archaic type" is looked upon as a cultural landmark rather than as a culture in itself, the finding of it in the wide area mentioned does not prove much. In other words, if we are to believe that all art at some time or other passes through a stage wherein it shows "archaic type" characters, the mere fact that art with archaic characters is found in both Middle America and South America does not mean much. The writer, however, finds that the former interpretation is the better. There can be but little doubt as to the absolute priority in point of time of the archaic culture of the Peruvian shell-heaps. The work of Uhle has shown that in Peru, as in Middle America, the earliest culture of all was the archaic type, and we now know that this type was uniform throughout Middle America and on the Peruvian coast. It is the foundation whereon all other cultures were built.

APPENDIX II.

A TABLE TO SHOW ROUGHLY THE CHRONOLOGICAL ORDER OF THE EARLY PERUVIAN CULTURE PERIODS.

NAMES.	AREAS.	REMARKS.
Proto-Chimu.	The coast from Tumbez to Ancon.	Characterized by realism and light tonality.
....	....	....
Proto-Nascá.	The coast from Pachacamac to Arica.	Distinguished by conventionalization and rich coloring.
....	....	....
Tiahuanaco I.	In the mountains, from Samaipata to Cuzco, and especially about Lake Titicaca.	A culture rich in architectural remains. Endowed with a stone technique. Not like P-C or P-N, possibly Arawakan.
— — —	— — —	— — —
Tiahuanaco II.	In mountains and on coast, from Colombia to Argentina and Chile.	Probably a complex of the three foregoing cultures.
————	————	————
"Epigonal" and Red-white-black.	On the Peruvian coast.	Decadent forms of Tiahuanaco II culture.
————	————	————
Chimu and Nasca.	On the Peruvian coast.	Revival of some of the features of Proto-Chimu and Proto-Nasca.
....	....	....
Colla-Chulpa.	Around Lake Titicaca.	Low culture with faint traces of Tiahuanaco II influence.
....	....	....
Early Inca.	Cuzco region.	Beginning of new period in the mountains.
————	————	————
Inca "Empire."	From Ancasmayo in Ecuador to Maule in Chile.	The last pre-Columbian culture. Graceful forms, restrained coloring.

.... Separates contemporaneous cultures.

— — — Separates partly contemporaneous cultures.

———— Separates non-contemporaneous cultures.

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ABBREVIATIONS

AA	American Anthropologist.
AASP	American Antiquarian Society Proceedings.
AJA	American Journal of Archaeology.
AJS	American Journal of Science.
AMJ	American Museum Journal.
APAMNH	Anthropological Papers American Museum of Natural History.
BAE	Bureau of American Ethnology.
BGA	Berliner Gesellschaft für Anthropologie.
BSGL	Boletín de la Sociedad Geográfica de Lima.
BSGLP	Boletín de la Sociedad Geográfica de La Paz.
CAAS	Connecticut Academy of Arts and Sciences.
CIA	Congrès internationale des américanistes. (See also, ICA.)
CIAAP	Congrès internationale d'anthropolgie et d'archéologie préhistoriques.
FCMP	Field Columbian Museum Publications.
FFLSA	Facultad de Filosofia y Letras, Sección Antropológica (Buenos Aires).
HS	Hakluyt Society.
ICA	International Congress of Americanists. (See also, CIA.)
JAP	Journal de la Société des Américanists de Paris.
JRGS	Journal of the Royal Geographical Society.
MFAB	Museum of Fine Arts Bulletin (Boston).
NAMS	Nouvelles Archives des Missions Scientifiques.
NGM	National Geographic Magazine.
PAAAS	Proceedings of the American Academy of Arts and Sciences.
RBAE	Report of the Bureau of American Ethnology.
RH	Revista Histórica (Lima).
SMP	Smithsonian Miscellaneous Publications.
TCCC	Trabajo del Cuarto Congreso Científico.
ZE	Zeitschrift für Ethnologie.

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LIST OF ILLUSTRATIONS.

PLATE I.

Fig. 1. A Proto-Chimu vessel showing two hunting-scenes, one modelled and one painted in dark brown on a cream-colored slip.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 2. A Proto-Chimu vessel with a modelled scene representing some ceremony, and an engraved landscape.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 3. A somewhat grotesque Proto-Chimu vessel of the portrait type. Note the fangs and the feather-like headdress.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 4. A portrait, probably belonging to the Proto-Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 5. A dipper-shaped Proto-Chimu vessel adorned by a conventionalized starfish or octopus.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE II.

Fig. 1. A Proto-Nasca vessel of the semi-realistic type. Note realistic hands and the modelling of the head.
Courtesy of the American Museum of Natural History, New York City.

Fig. 2. A Proto-Nasca vessel with some realism, especially in the spears and spear-thrower. Note the eye-painting, and the type of dress.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 3. A Proto-Nasca bowl showing Centipede-God motif. Note four-digit hands.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 4. A Proto-Nasca vessel with two narrow spouts.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 5. A Proto-Nasca vessel decorated with the Multiple-headed God motif. Note the four digit-hands.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 6. A semi-realistic modelled vessel, of the Proto-Nasca culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE III.

Fig. 1. A Proto-Nasca vessel. Note the headdress, the mouth-mask, the ribbon-and-ring decorations, and the conventionalized spear-thrower.
Courtesy of the American Museum of Natural History, New York City.

Fig. 2. A Proto-Nasca vessel with a variant of the Centipede God motif. Note the four-digit hands and the protruding tongue.
Courtesy of the American Museum of Natural History, New York City.

Fig. 3. A Proto-Nasca vessel. Note the feather-like mouth-mask, the ribbon-and-ring decorations, and the bilateral symmetry of the design.
Courtesy of the American Museum of Natural History, New York City.

PLATE IV.

Fig. 1. An embroidered Proto-Nasca textile. Note the headdress, mouth-mask, and the four digit-hands.

Courtesy of the Museum of Fine Arts, Boston, Massachusetts.

Fig. 2. A Proto-Nasca vessel decorated with a variant of the Centipede God motif and with a painted human face. Note the four-digit hands, the protruding tongue and the "tears."
Courtesy of the American Museum of Natural History, New York City.

Fig. 3. A Proto-Nasca textile. Note the headdress, the mouth-mask, the four-digit hand, and the elaborately decorated protruding tongue.
Courtesy of the American Museum of Natural History, New York City.

PLATE V.

A richly embroidered Proto-Nasca textile. The design combines elements from the Centipede God motif with elements from the Multiple-headed God motif.
Courtesy of Dr. Denman Waldo Ross and of the Museum of Fine Arts, Boston, Massachusetts.

PLATE VI.

A large and beautiful embroidered Proto-Nasca garment. Made entirely of wool.
Courtesy of Dr. Denman Waldo Ross and of the Museum of Fine Arts, Boston, Massachusetts.

PLATE VII.

The Weeping God on the monolithic gateway at Tiahuanaco.
Photograph by courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE VIII.

Fig. 1. A finely woven garment, probably of the Tiahuanaco II culture.

Courtesy of the American Museum of Natural History, New York City.

Fig. 2. A garment from the coast of Peru, probably of the Tiahuanaco II culture.
Courtesy of Dr. Denman Waldo Ross and of the Museum of Fine Arts, Boston, Massachusetts.

PLATE IX.

The Greater Chavin Stone.
Photograph by courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE X.

Two textiles, either late Tiahuanaco II or Epigonal. Note the results of long-continued conventionalization and elaboration.
Courtesy of the American Museum of Natural History, New York City.

PLATE XI.

Fig. 1. A Red-white-black ware vase. Note the headdress, the modelled face and the painted animal-figure.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 2. A Red-white-black ware vessel in the form of a cat-like animal.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 3. A Black-ware vessel, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 4. A Black-ware flask, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 5. A Black-ware vessel, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

Fig. 6. A Black-ware flask, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE XII.

Fig. 1. A Chimu textile. Note the combination of geometric decoration with greatly conventionalized animal-heads or bird-heads.
Courtesy of the American Museum of Natural History, New York City.

Fig. 2. A very fine pouch, Chimu culture.
Courtesy of the American Museum of Natural History, New York City.

PLATE XIII.

Fig. 1. An Inca or Cuzco aryballus of exquisite shape, decorated with quipu motif.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

Fig. 2. An Inca or Cuzco aryballus, decorated with rectilinear meander.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

PLATE XIV.

Fig. 1. An Inca or Cuzco pelike, decorated with lines-and-cross motif.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

Fig. 2. A deep bowl with handles, Inca or Cuzco type.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

Fig. 3. A shallow dish, decorated with saw-tooth motif and with diamond-motif. Note the handle in the form of a human head. Inca or Cuzco type with influence from the art of the coast.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

Fig. 4. A shallow dish, Inca or Cuzco type.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

PLATE XV.

Fig. 1. An Inca or Cuzco aryballus.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

Fig. 2. An Inca or Cuzco vessel.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

Fig 3. A vessel with anthropomorphic decorations. Although the specimen was found at Machu Picchu, it may have been carried there from the coast. It is of the Chimu type, not of the Inca or Cuzco type.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

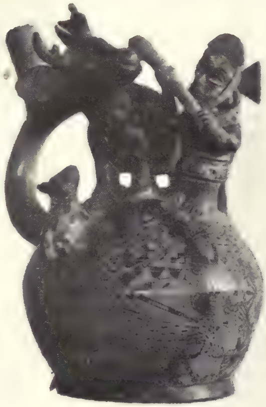
Fig. 4. A vessel combining Chimu art with Inca or Cuzco art. Compare with Figure 3.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

PLATE XVI.

Two Inca or Cuzco type ponchos. Very rich in color, and beautifully woven.
Courtesy of the American Museum of Natural History, New York City.

PLATE XVII.

Two Inca or Cuzco type textiles.
Courtesy of the American Museum of Natural History, New York City.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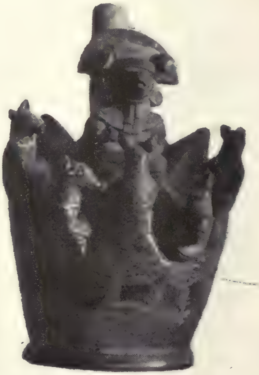
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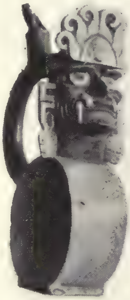
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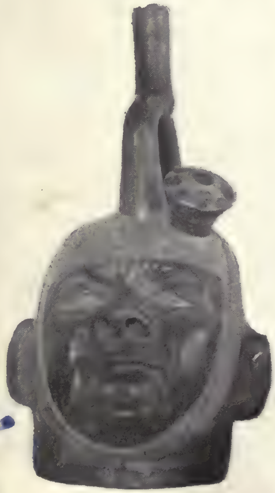
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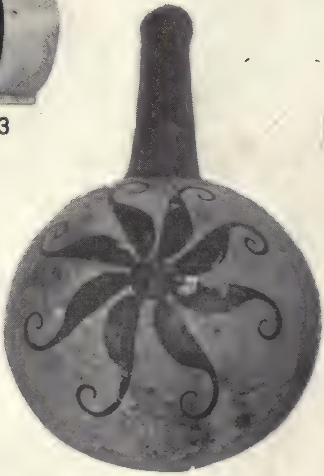
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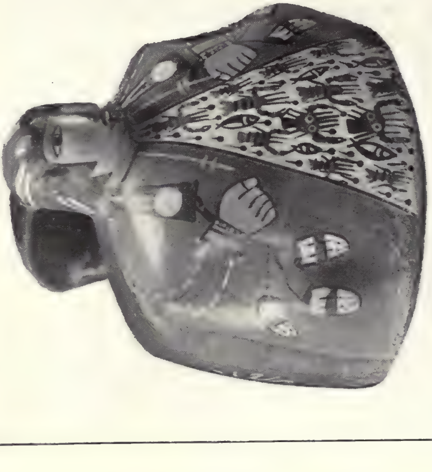
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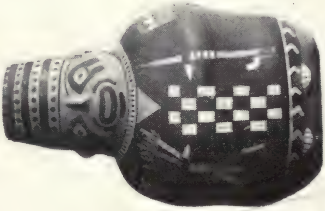
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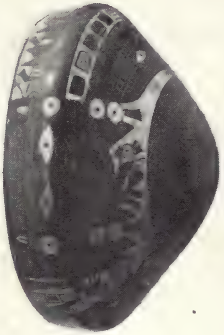
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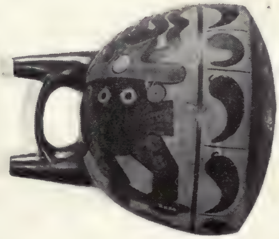
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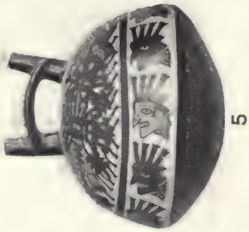
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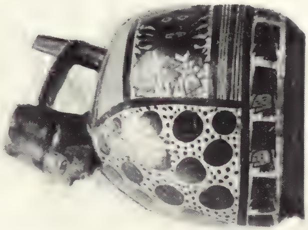
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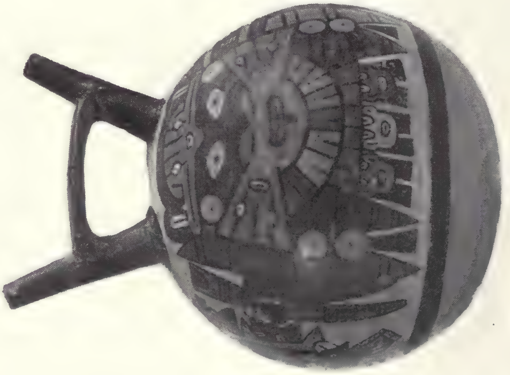
PLATE III.



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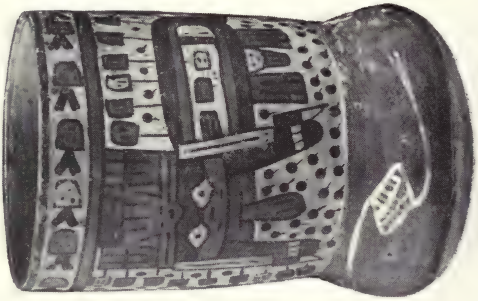

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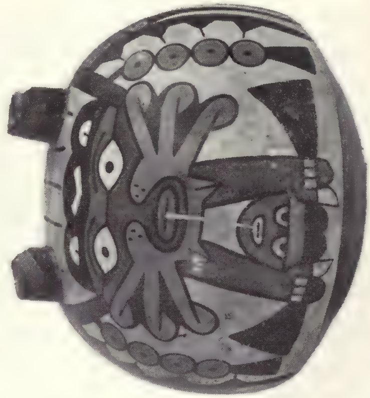

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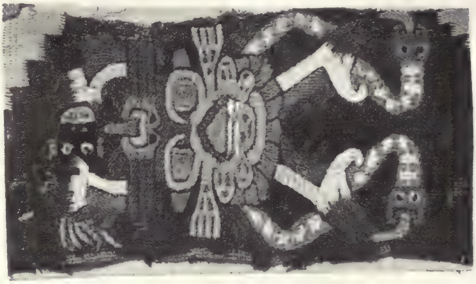

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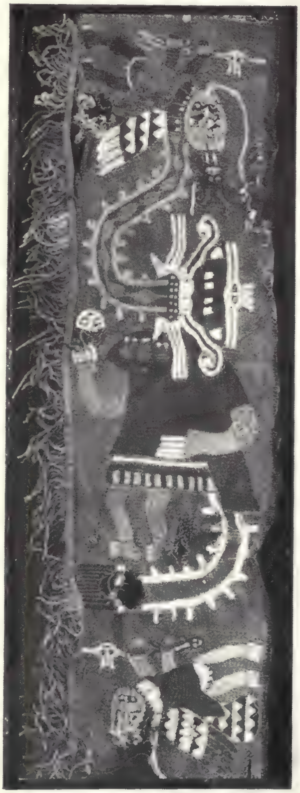

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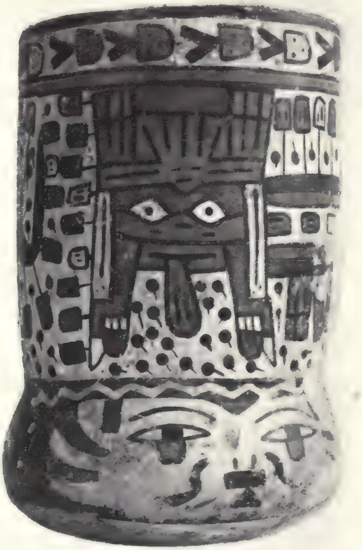

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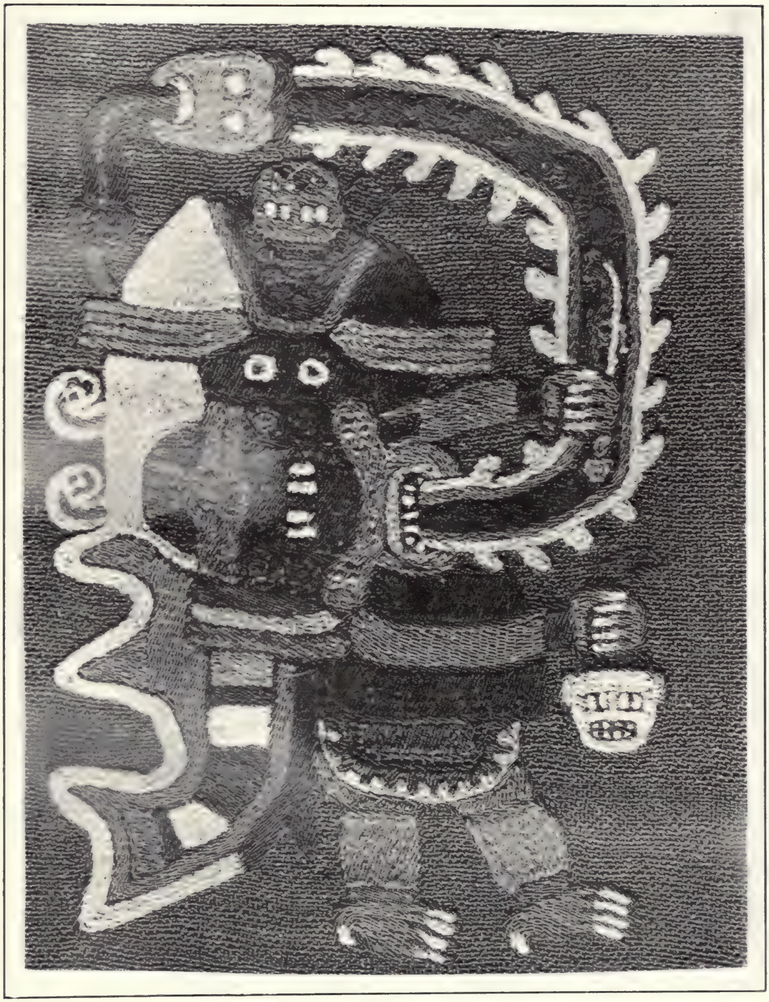

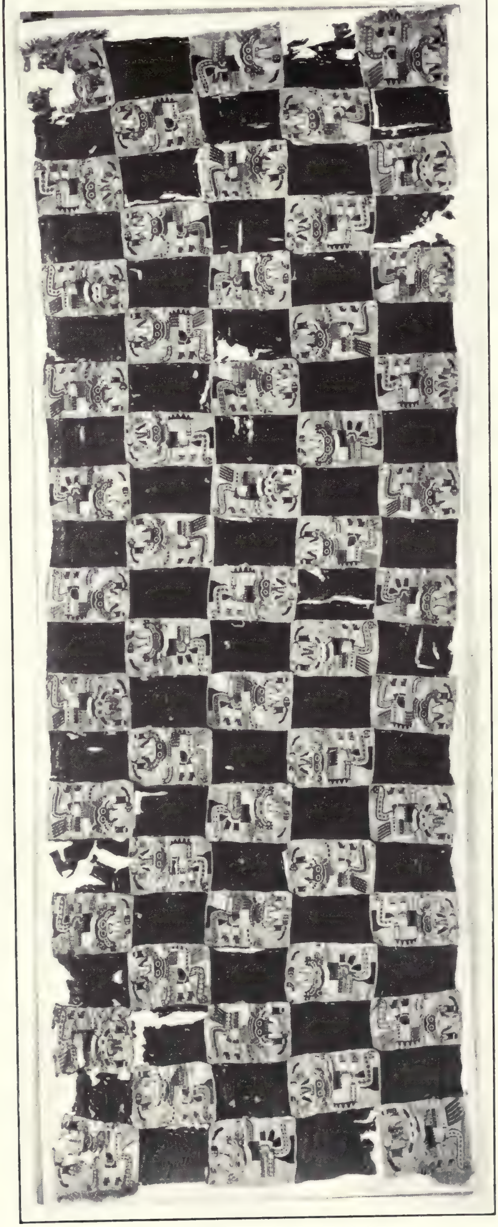

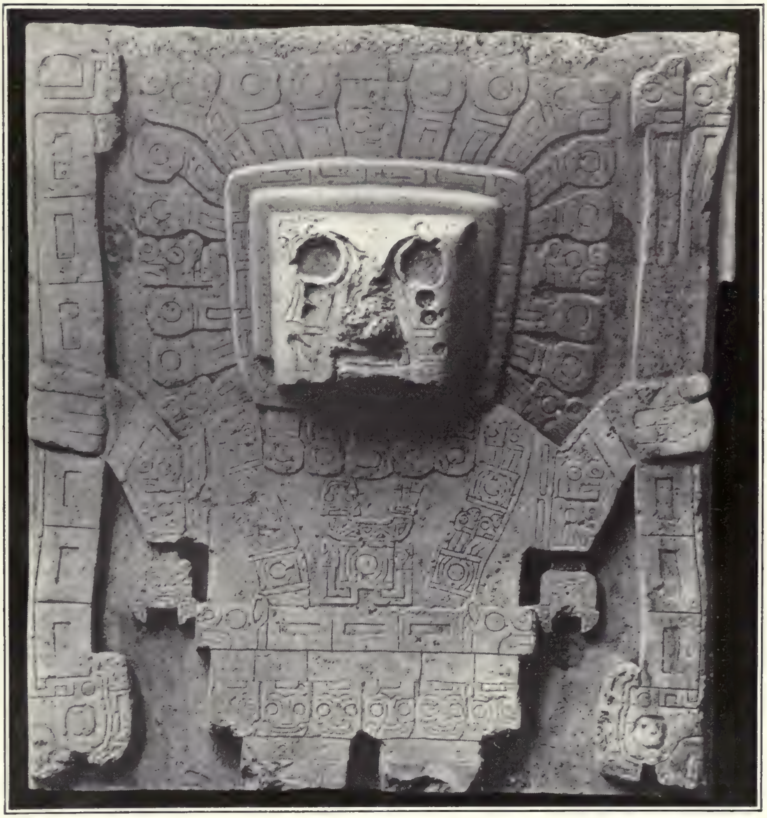

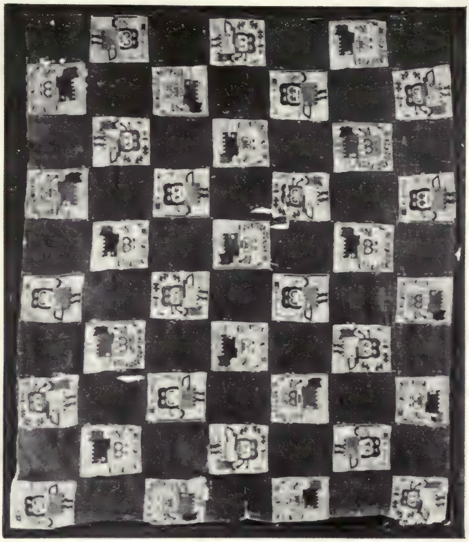

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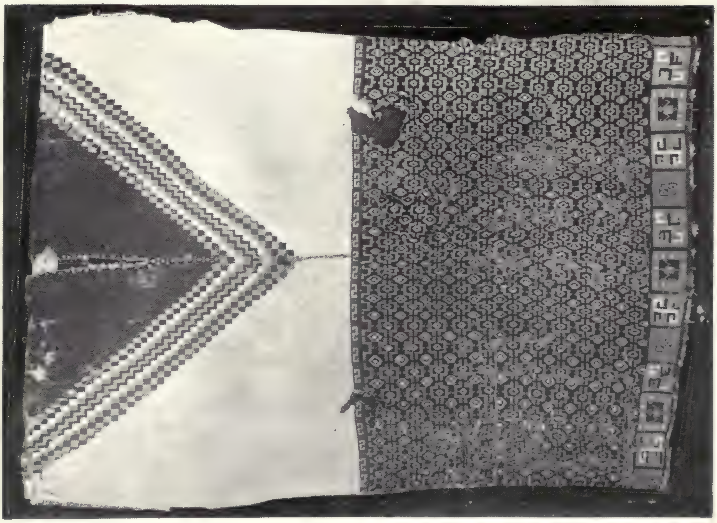

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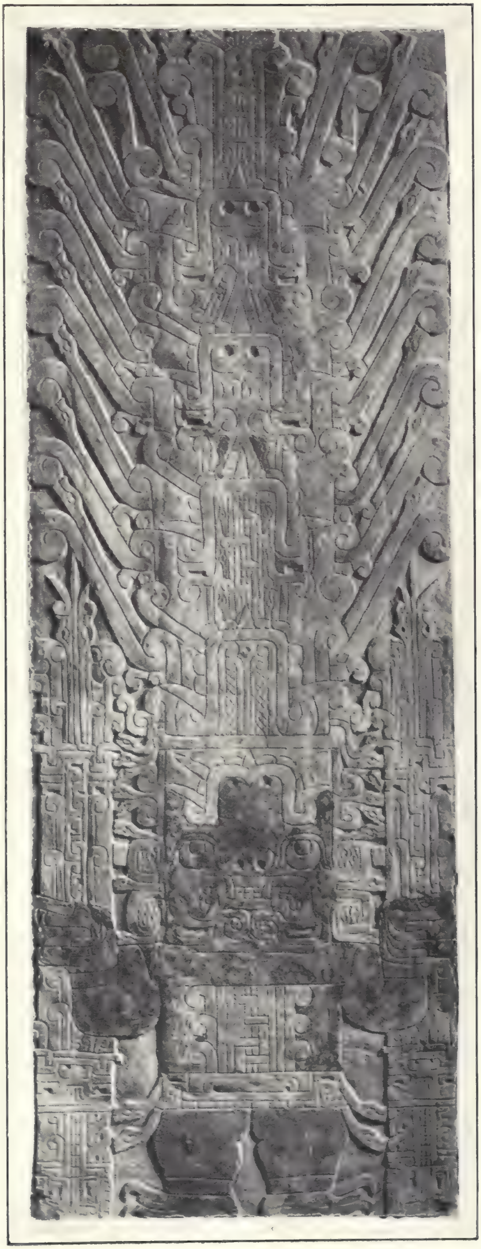
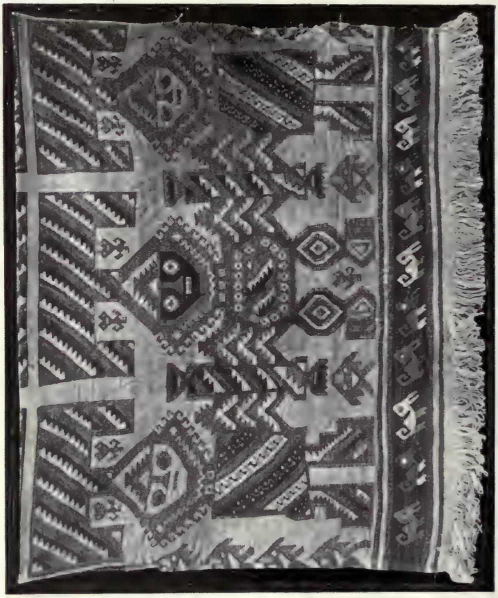


PLATE X.



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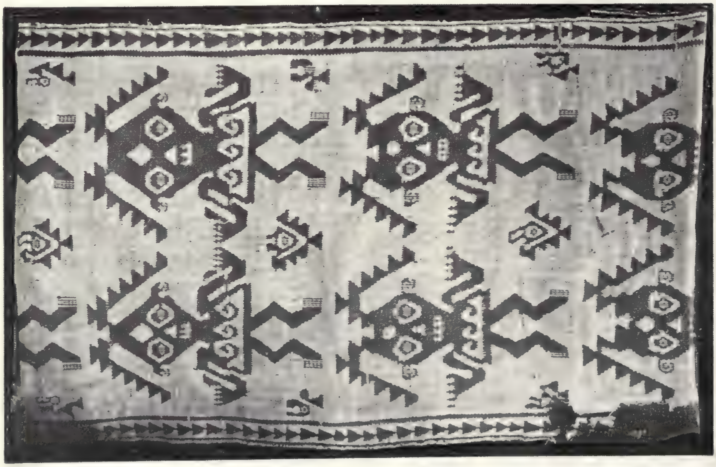

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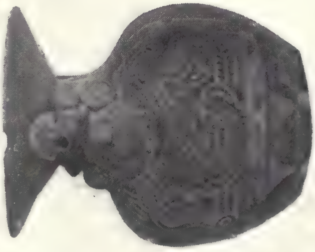
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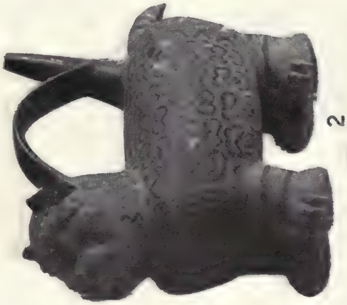
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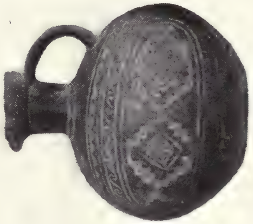
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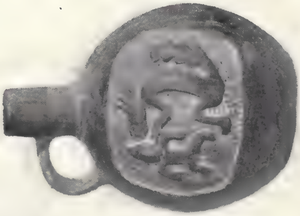
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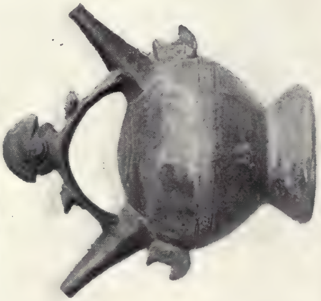
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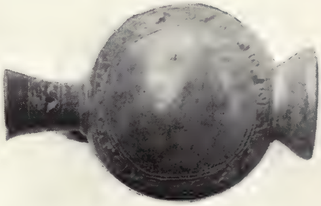
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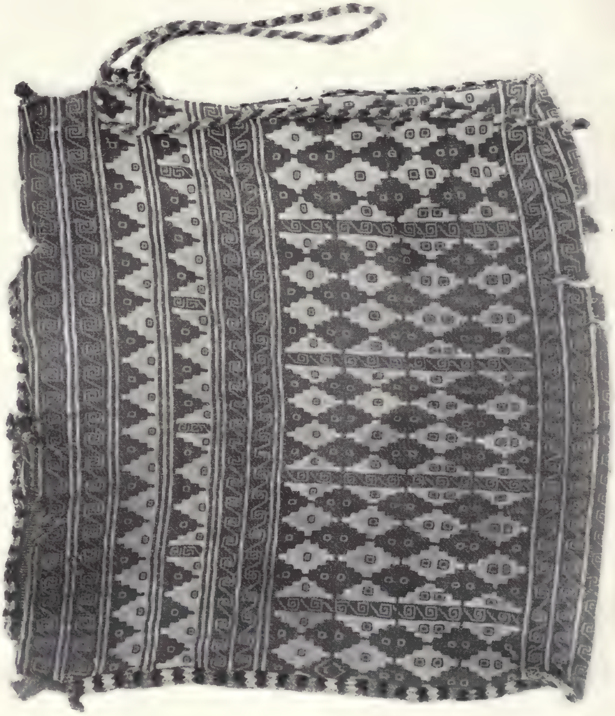

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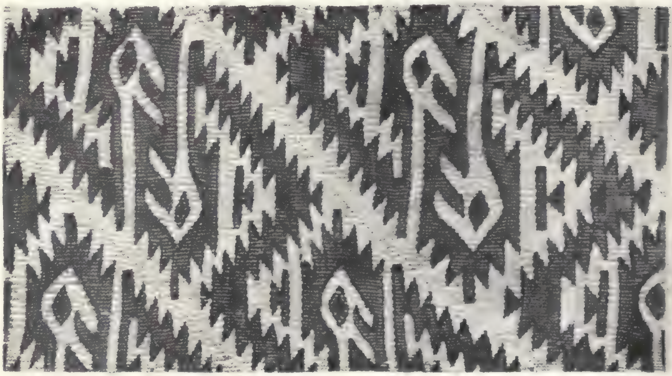

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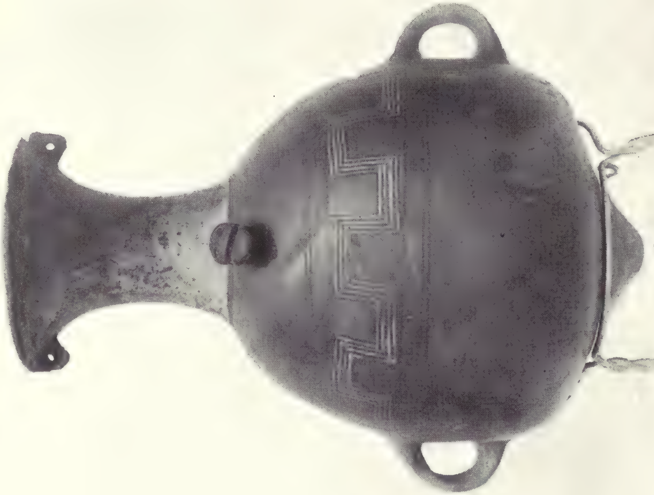

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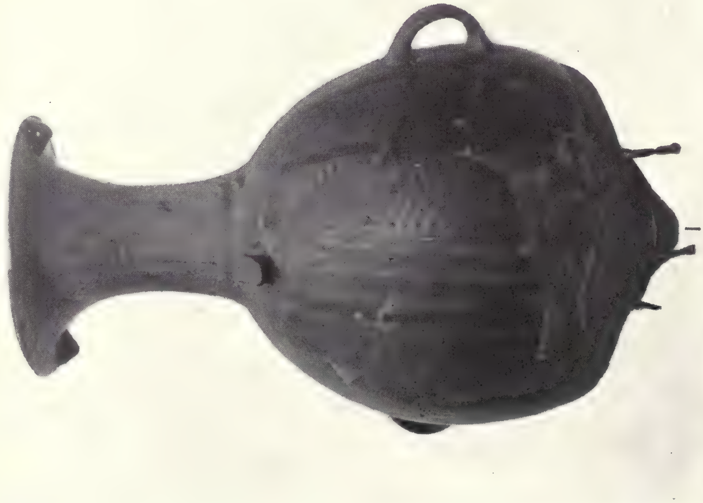

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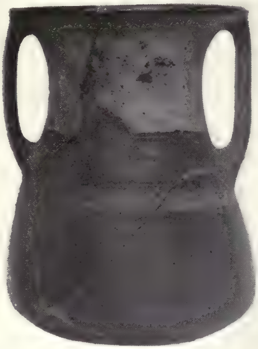

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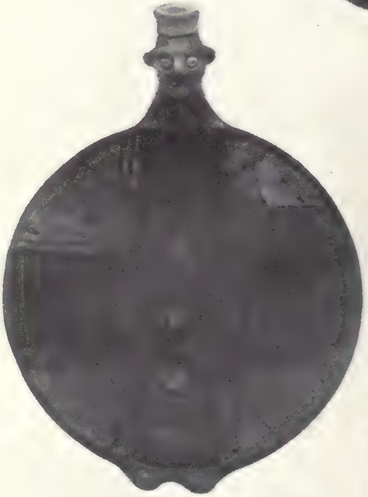

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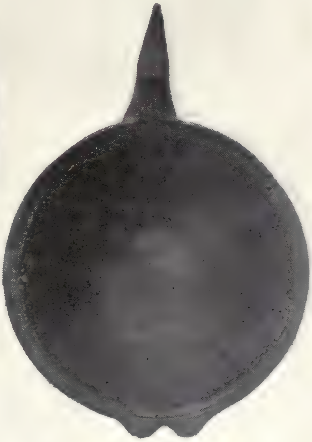

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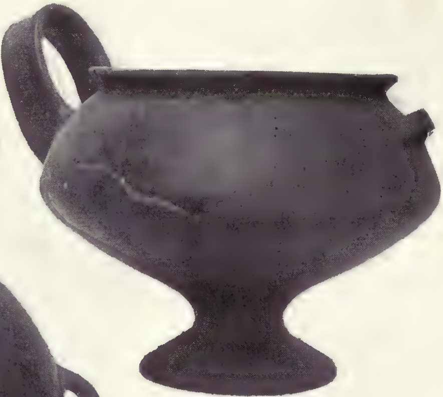

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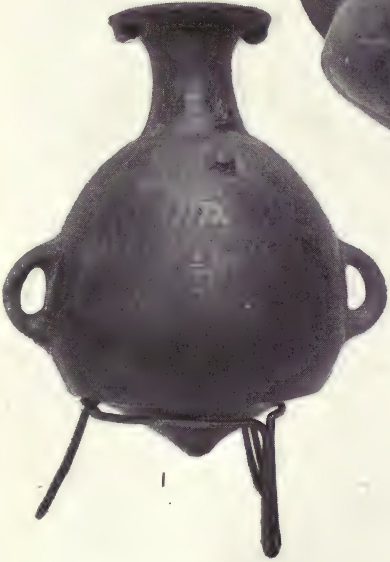

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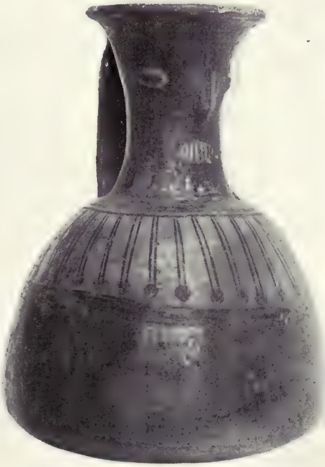

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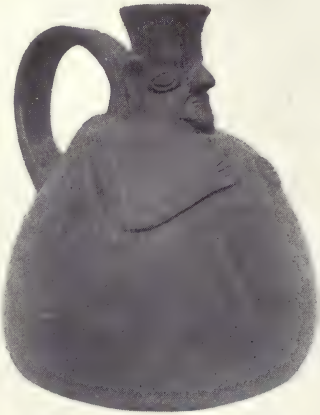

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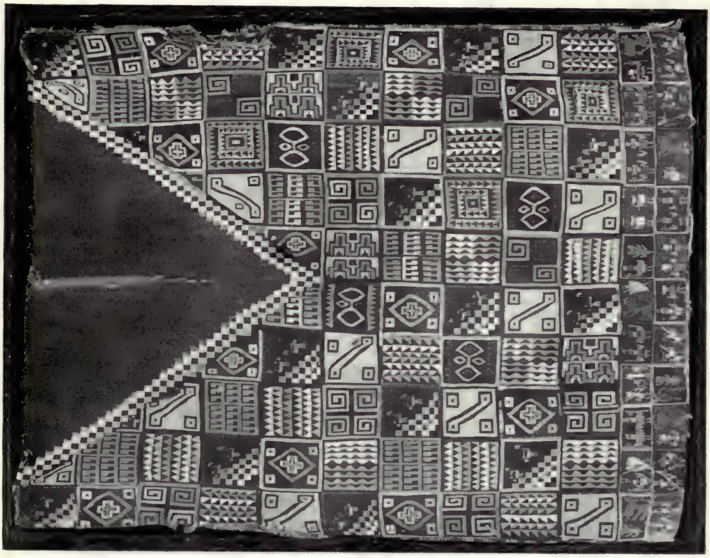

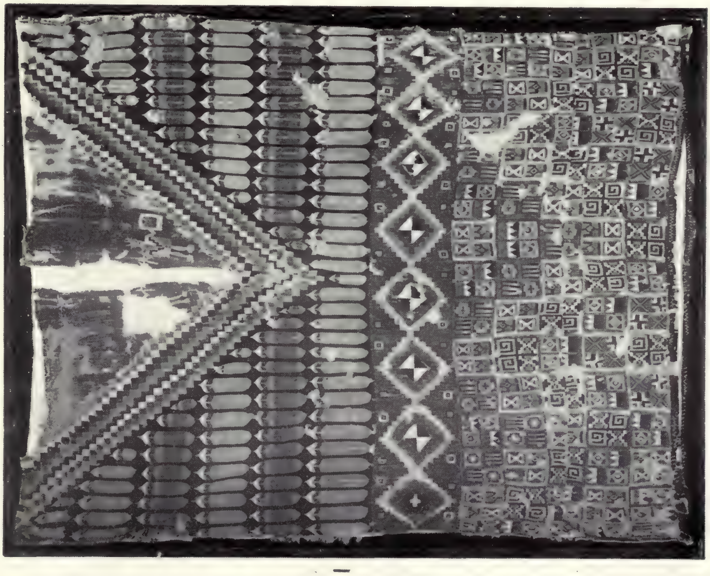

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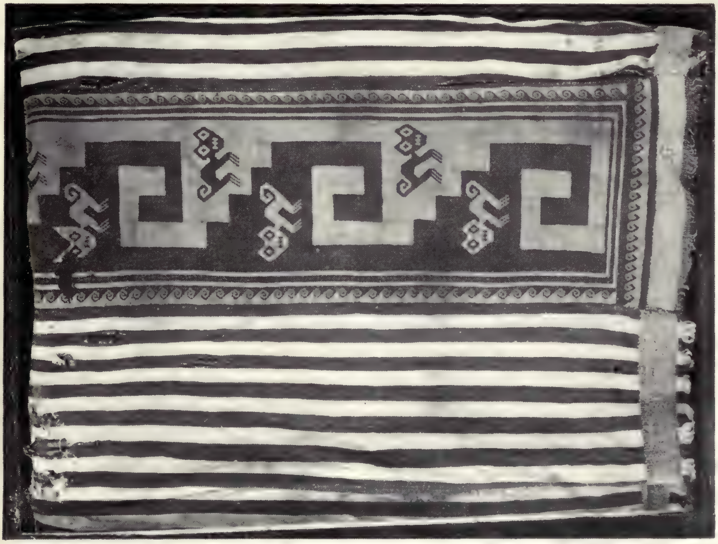

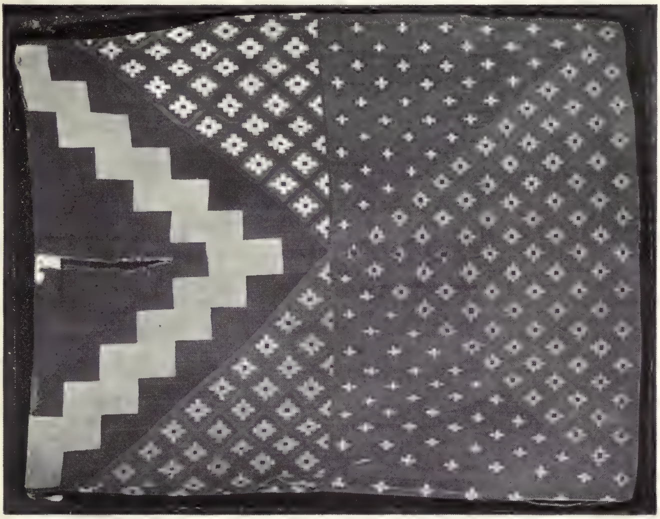

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